FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

A REUBEN H. DONNELLEY PUBLICATION

OHIO STATE UNIVERSITY
NOV 28 1960
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Wall begins tumble to street during New Haven, Conn., four-alarm fire in factory under demolition.
See story page 1038

NOVEMBER
1960

if your men aren't wearing Bullard helmets... head protection is costing you too much!

MORE FIRES FOR YOUR MONEY!

Expose rugged Bullard HARDBOILED fire helmets to searing flame (high as 2,000° F.), freeze them, soak them in boiling water... these grueling punishments won't soften or weaken a Bullard fire helmet's protective characteristics! This is the only fire hat that exceeds Federal specifications. No Fire Helmet is tougher, yet few are as comfortable to wear. Light and cool on your head... made from non-conductive fiber glass they weigh only 20 ounces. In a choice of permanent non-fading colors, these helmets are equipped with replaceable suspensions that adjust to all standard head sizes. Today, ask to see how Bullard Fire Helmets make your budget go further... help you fight more fires for the money!

Stop First Aid Water Damage

New Bullard Fire Department First Aid Kits are 100% water proof. Every supply is separately sealed in Polyethylene wrappers. Includes new approved, spray on, pain killing *After Burn Treatment*.

New Emergency Burn Treatment

No matter how severe the burn Bullard *After Burn Treatment* instantly soothes pain-reducing shock. Helps prevent infection and promotes healing. ABT is both non-toxic and non-irritating. In 3, 5, and 11 oz. spray containers.

BULLARD
INDUSTRIAL SAFETY EQUIPMENT

E. D. BULLARD COMPANY SAUSALITO, CALIFORNIA

See your local fire equipment dealer or write for catalog of complete line of fire helmet accessories.

THE GREAT-EST PACK-AGE EVER!

For every Fire Chief . . .

The *new* INTERCEPTOR

FEDERAL PA-10

50-watt mobile combination

- Real coaster siren tone
- Quick pick up
- Long roll
- Brake action
- Super voice quality
- Powerful, compact, durable
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- Choice of 4 speaker styles
- No increase in price

Write for Federal Bulletin #325

FEDERAL SIGNAL SIGN and Corporation

13602 S. Western Av., Blue Island, Ill.

FIRE
ENGINEERING

VOL. 113 NOVEMBER, 1960 NO. 11

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Better Reader Service

Since August 1943 FIRE ENGINEERING has been published on the 15th day of the current month of issue. This method of production has been satisfactory over the 17 year period until very recently. However, prompt delivery of each issue to our readers has now become a problem.

As announced in the October 1960 issue FIRE ENGINEERING will take steps to correct this situation. Effective with the January 1961 issue, the publication date will be advanced to the first of each month.

It is our sincere hope that the change will be for the better to all concerned. Our sole aim in taking this action is to provide our readers and advertisers the best service possible.

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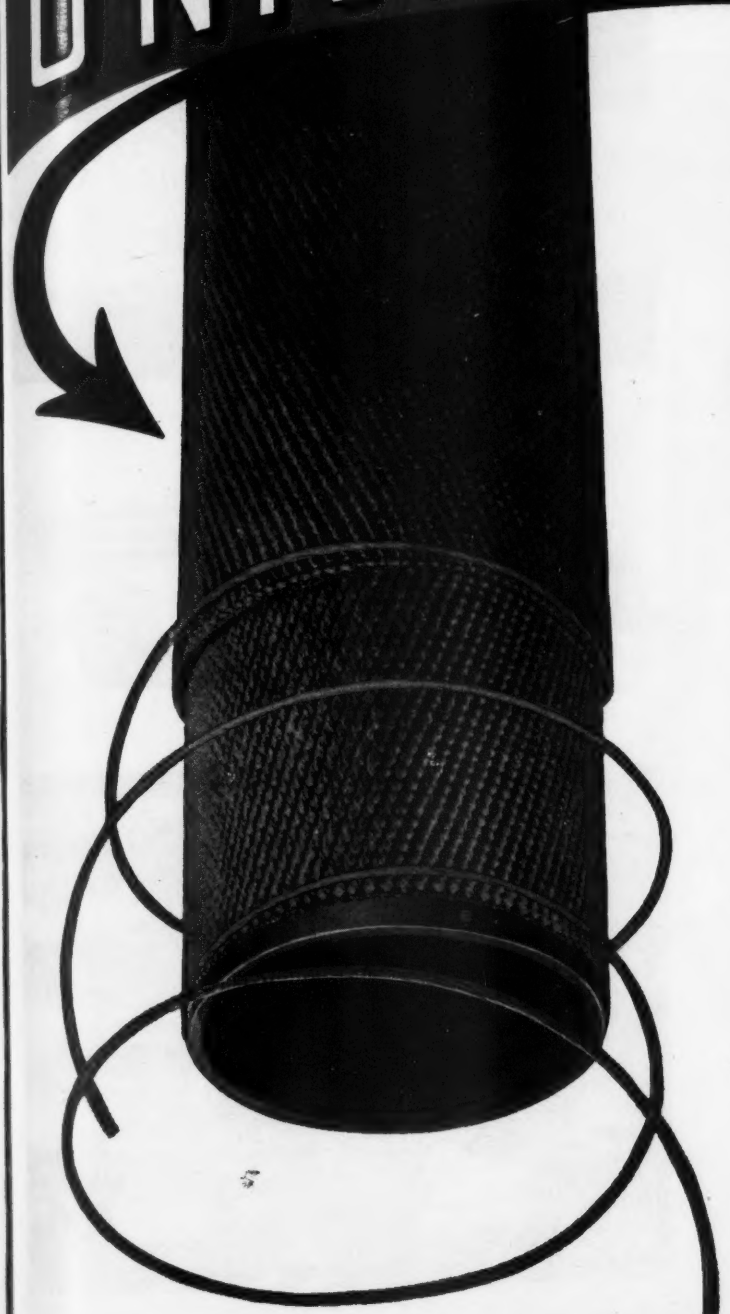
UNISPUN FIRE HOSE



ZERO TURNS

ZERO WARP

ZERO RISE

WRITE US OR CONTACT
YOUR AUTHORIZED
FABRIC FIRE HOSE
REPRESENTATIVE

WITH WEATHERMATE PROTECTION AND PRES-R-LOCK COUPLINGS

FABRIC FIRE HOSE COMPANY ★ SANDY HOOK, CONN.

Exclusive Manufacturers of Fire Hose Since 1869 ★★★★★

IN CANADA *Pierre Thibault* CANADA, LTD., LTEE., PIERREVILLE, QUEBEC

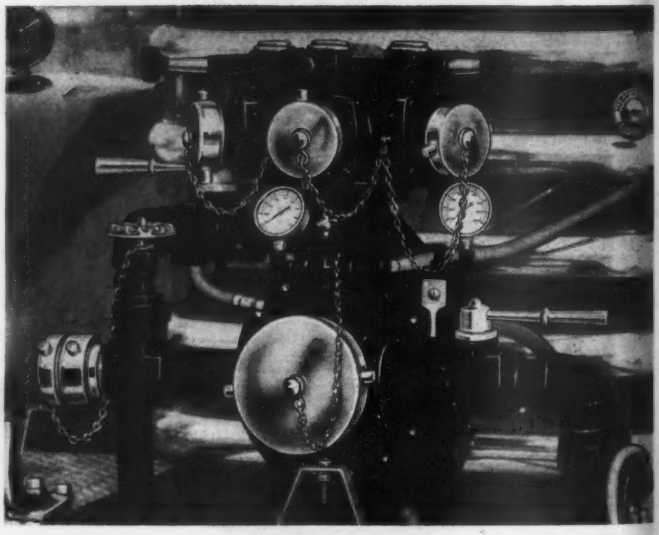
1001

Extra Fire Fighting Power TO KILL RUNNING FIRES FAST

...*yours* with an AMERICAN FIRE TRUCK equipped with a Barton American 750 GPM FRONT MOUNTED PUMP

...***yours*** Fine American Fire Apparatus craftsmanship on a standard commercial chassis that can readily be serviced by your local truck dealer. Excellent chassis balance and roadability plus maneuverability that helps you get at grass, brush and other running fires faster. Hose reel covers which keep hoses and fog guns warm, ready for instant action in coldest weather. Electric re-wind hose reels with brakes adjustable from ground level. Collapsible self-adjusting spring steel drum louvers which flatten when pressure expands hose, preventing damage to hose and couplings. Many other fine features you get only on an American Fire Apparatus truck.

...***yours*** Big, rugged Barton-American Front Mounted Pump that puts out 750 gpm at 150 lbs. pressure — that handles *three* 2½" hose lines at a time to give you high volume and delivers high pressure to 400 lbs. to give you effective fog streams. Exclusive interlocking pump clutch that *can't* slip, can't leave you helpless at a fire. Frost-proof design that has been proven over and over again. Positive, fast and frost-proof engine vacuum primer that needs no maintenance, no lubrication. Direct controls that make operation fast and easy. Factory engineered p.t.o. shaft, universal joints and pump gear ratios that are best for *your* truck's engine.



For complete details about this **extra fire fighting power,** see your nearest American representative.

American

AMERICAN FIRE APPARATUS CO.

FIRE APPARATUS CO.

Main Office: Main Street Rd., Battle Creek, Mich. Plants at: BATTLE CREEK, MICH., MARSHALLTOWN, IA., STRATFORD, ONT.

No quibbling about quality with firemen in a hurry

B.F.Goodrich hose pays back the extra pennies it costs

WHEN firemen rush to put out a fire there's no quibbling about whether quality hose is necessary. The extra seconds needed to get heavy, bulky hose into action, replace a blown out section or put on more hose for longer lines are all it takes to wipe out the money saved on "just as good as" hose. Quality features in B.F.Goodrich hose that prevent these delays add only a few cents per foot to its costs, but are worth much more when the pressure's on.

For example, B.F.Goodrich hose is as strong as heavier hose, but much lighter and more flexible. That's because of the "filler" cords of Dacron fiber which go around the hose and carry the load under pressure. Dacron cords are thinner, and three times stronger than cords used in ordinary hose. The hose not only lasts longer, but is easier to handle, and coils tighter—so that hundreds of extra feet can be racked on a truck.

Not one length of this hose has ever failed at the coupling. That's because of its Plylock end protection, an extra layer of hard woven cords extending 12″ from the coupling, which adds 100% more strength to the coupling area.

Superseal is a special treatment that practically eliminates mildew as a hose killer. This exclusive B.F.Goodrich treatment for hose gives 10 times more resistance to mildew and rotting than ordinary treatment.

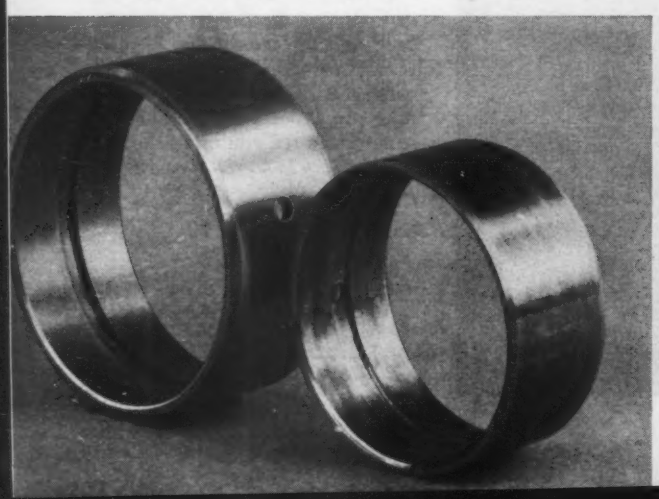
If you're looking for a good buy in hose, get the B.F.Goodrich fire hose with all these quality features. It may cost more to begin with, but will actually cost you less in the long run. Your B.F.Goodrich distributor can tell you more about it. *B.F.Goodrich Industrial Products Company, Dept. M-934, Akron 18, Ohio.*

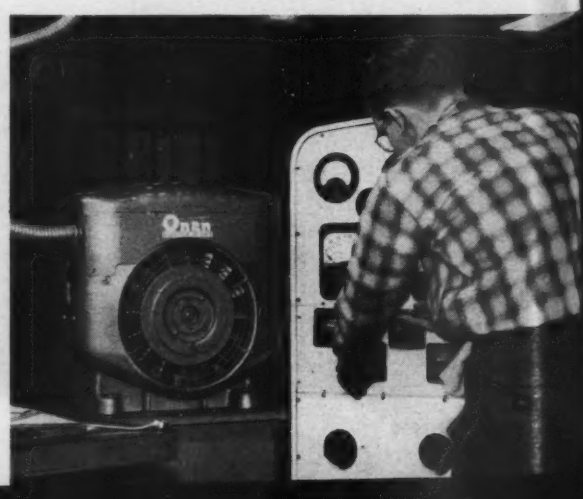
B.F.Goodrich
FIRE HOSE

Onan Electric Plants are Pe
when this independent te

Big, beefy bearings for longer life. (Lower left) double-size Onan bearings vs. small bearings (right) used in many other makes. Larger bearing surface reduces wear, stretches time between overhauls. Onan builds up to performance—never down-to-a-price.

The engine that ran equivalent to 487,888 automobile miles. Here's endurance no auto could begin to match. Onan engine #1068 was operated for 12,197 hours. It was stop-started 100 times. At test's end #1068 and generator were delivering their stated output.





Performance Certified only tester says O.K.

His job is to provide a double-check on Onan's own tests and testing methods

The man at the left is an expert from an independent testing laboratory. On the job, he believes nothing except what his trained eyes, ears and scientific testing instruments tell him.

He, and others like him, pay frequent surprise visits to Onan factories. He can pull any Onan plant off the test line. Put it through its paces. Recheck the checks Onan engineers and inspectors have already made. He has authority to pull a whole series of plants off the line if he finds one fault. He does all this even though every Onan plant is tested for hours by Onan personnel *before it is shipped.*

Onan takes these special precautions to make *doubly* sure that you get all that you pay for, and more, when you own a Performance Certified Onan. For more details—and an analysis of your primary and stand-by power needs—see the Onan distributor nearest you. He's listed in the telephone classified section in all major cities. Or write direct.

ONLY ONAN GIVES YOU THIS CERTIFICATION

PERFORMANCE CERTIFIED
We certify that when properly installed and operated this Onan electric plant will deliver the full power and the voltage and frequency regulation promised by its nameplate and published specifications. This plant has undergone several hours of running-in and testing under realistic load conditions, in accordance with procedures certified by an independent testing laboratory.
D. W. ONAN & SONS INC.
Minneapolis 14, Minnesota
Onan

Onan®

World's Leading Builder of Electric Power Plants

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NEW ALL-PURPOSE extinguishers

Now... U. L. and F. M. approved for all classes of fires!

Now you can safely, effectively fight all classes of fire—A, B and C—with a single type of extinguisher! These revolutionary new ALL-PURPOSE Dry Chemical Extinguishers carry *high* Underwriters' Laboratories "ABC" ratings . . . are also approved by Factory Mutual. They provide the most powerful three-in-one fire protection ever offered in a single extinguisher! The 30 lb. model (U.L. rating 4-A, 20-B, C) packs fire-killing power equal to *two* Soda Acid extinguishers (rated 2-A) plus *one* conventional Dry Chemical extinguisher (rated 20-B, C)!

All-Purpose ABC rated extinguishers expel a new patented "Formula S" powder* which reacts chemically upon contact with all classes of fire. Powder is transformed into a strong fire-retardant coating that virtually eliminates re-flash in deep-seated wood and other Class A fires, including rubber! Free-flowing, non-toxic, non-abrasive "Formula S" is equally effective on burning liquids (Class B) and electrical fires (Class C).

Three-In-One Fire Protection

Smothers Class A fires with an insulating cover . . . prevents re-ignition or flashback!
Smothers and cools Class B flammable liquid fires!
Smothers Class C electrical fires . . . will not conduct electricity!

Available in 20 and 30 lb. sizes, featuring easy squeeze-grip operation . . . no annual recharge. Order today from your distributor! Look in the Yellow Pages under "Fire Protection Equipment." Or write to The Fyr-Fyter Company, Dayton 1, Ohio.

Fyr-Fyter

Branches: Atlanta, Baltimore, Boston, Chicago, Dallas, Dayton, Detroit, Los Angeles, New York, Newark, Philadelphia, Pittsburgh, Portland, Rochester, San Francisco, Toronto (Ontario). Representatives and Distributors in all principal cities.

**Monoammoniumphosphate treated with a silicon resin.*

"MY MEN DESERVE THE BEST"

". . . Each one puts his life on the line every time he answers an alarm. They *must* take chances, so I *cannot* take chances in selecting their equipment. There's too much at stake!

"Take a 2-way radio system, for example. I want the very latest improvements that engineers can come up with—but *not* at the expense of reliability. Our equipment must be field-tested and proved before I stake my men's lives on it. I demand radio that can take it—day in and day out. I don't coddle my men—I *won't* coddle their equipment.

"When our radio needs maintenance—I want it NOW. We can't afford outages. I want a factory-trained man on the spot when we need him—but, we had better not need him too often . . .

"Make? Like most fire departments, we chose the one that measures up to firemen's requirement—Motorola."

MOTOROLA
2-WAY FIRE RADIO

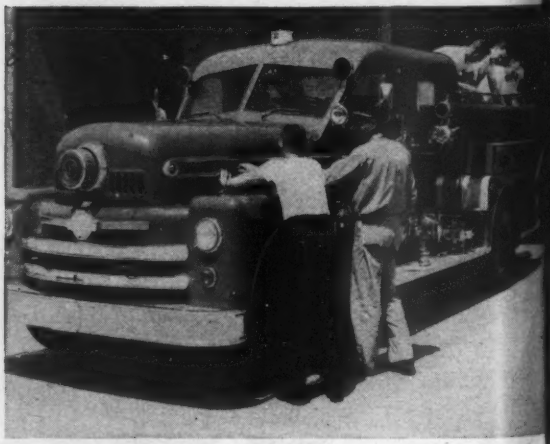
Motorola Communications & Electronics Inc.
4501 Augusta Blvd., Chicago 51, Ill.
A Subsidiary of Motorola Inc.

Take a tour of Columbus, Ohio...

where Leece-Neville alternators have ended battery problems!

The fast, never-resting pace of patrol cars and emergency wagons in the Columbus Police Department necessitates replacement every 12 to 16 months. According to Sgt. Harry M. Buckner, who heads up police vehicle maintenance, "About 145 of our units are Leece-Neville alternator equipped. We transfer the alternators from old cars to new ones as they are purchased, and one alternator usually outlives three cars."

"Leece-Neville alternator systems have been the answer to our battery problems," report Horace J. Swain, Traffic Equipment Supervisor, (left above) and Walter W. Curlis, Superintendent of Municipal Garages. "Not only do they keep our batteries in operating condition at all times, but they give us exceptionally long, trouble-free service that helps keep generator and battery maintenance expense to a minimum."



Fire Maintenance Foreman William H. Miller (second from left above) claims, "We have about 100 pieces of equipment with Leece-Neville alternators—cars, trucks, squad wagons and pumpers—and they give us no trouble over the life of our vehicles. Some alternators installed in 1950 are still in service; others have gone better than 100,000 miles. These alternators keep batteries charged, eliminate the need for charger plugs on our cars, and improve radio performance on all of our units."

Columbus, capital city of Ohio, is also noted for its progressive city government, its vast land area compared to population, and its rapidly growing network of modern freeways.

Way back in 1946, when Leece-Neville first introduced the alternator-generator for automotive use, Columbus immediately installed six units for test purposes (3 are still in use). Today the city fleet includes almost 400 vehicles equipped with Leece-Neville alternators. Usage is widespread . . . in police, fire, traffic regulation, electric, water and sewer departments . . . wherever discharged batteries have been a problem in the past.

Alternators may solve your problem too! But be sure you specify *Leece-Neville alternators*, proved trouble-free during 14 years of actual service in all parts of the country. No other supplier can make this claim! For complete information, mail the coupon below. Leece-Neville also is a leading supplier of DC generators, fractional HP motors, regulators, cranking motors and switches.

QUALITY ELECTRICAL EQUIPMENT
Leece-Neville
SINCE 1909

Specify Leece-Neville alternator systems as factory-installed special equipment on new vehicles.

20 trucks and 4 cars in Columbus' Traffic Regulation Department are equipped with Leece-Neville alternator systems. Even with a full electrical load of multiple flasher lights and 2-way radios in operation during long periods at engine idle, L-N alternators keep batteries charged.

The Leece-Neville Company, Dept. FE-11
1374 East 51 Street • Cleveland 3, Ohio

Please send me complete information about alternator systems and other products for my type of service.

Name _____ *Title* _____

Firm or Dept. _____

Address _____

City _____ *Zone* ___ *State* _____

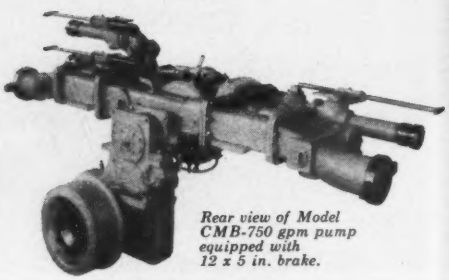
Type of Service _____

another reason why . . .

WATEROUS MEANS DEPENDABILITY

The dial bore gauge with which this craftsman is checking tolerance on this WATEROUS pump gear case is more than a precision instrument. It symbolizes the care that goes into every detail of a WATEROUS pump.

In addition to rigid inspection of each vital part, the finished WATEROUS pump is tested under full horsepower, according to contract requirements. This final check on the many precision steps that have gone into the pump is still another example of the exacting standards that spell WATEROUS dependability.



Rear view of Model CMB-750 gpm pump equipped with 12 x 5 in. brake.

Waterous SINCE DEPENDABLE 1886

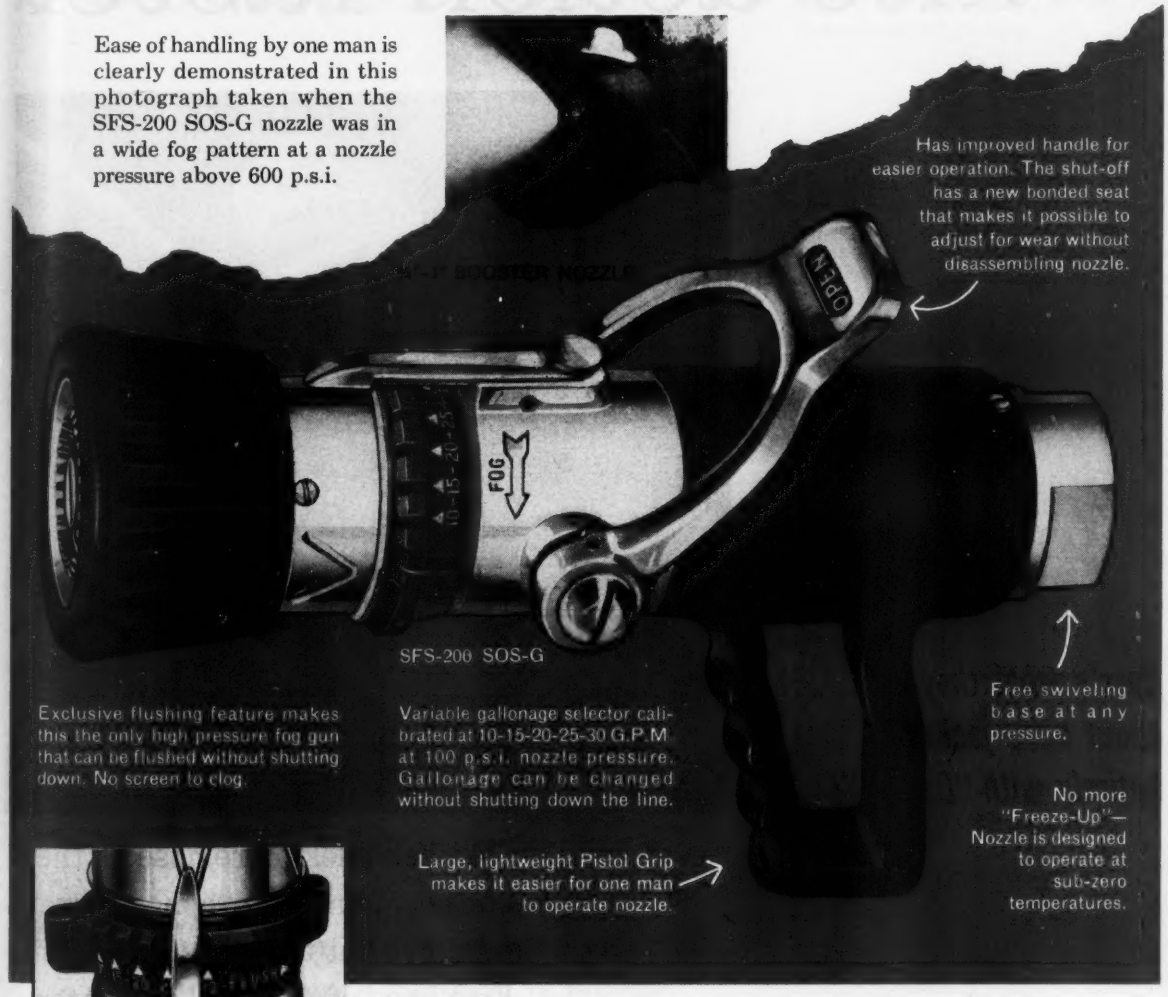
For more complete information about WATEROUS fire pumps write:

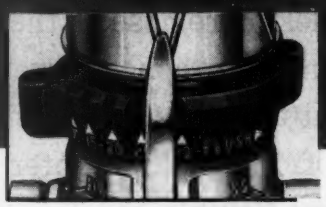
WATEROUS COMPANY

80 East Fillmore Ave., St. Paul 7, Minnesota, Dept. 3F13

NOW—one man can easily operate this new constant-flow fog gun at nozzle pressures in excess of 600 p.s.i.

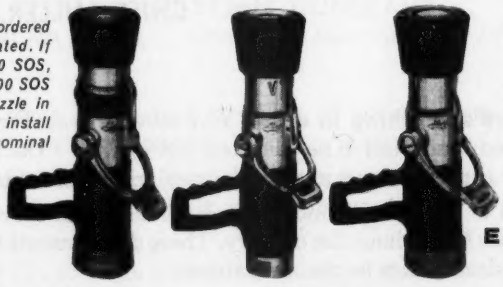
Ease of handling by one man is clearly demonstrated in this photograph taken when the SFS-200 SOS-G nozzle was in a wide fog pattern at a nozzle pressure above 600 p.s.i.


Has improved handle for easier operation. The shut-off has a new bonded seat that makes it possible to adjust for wear without disassembling nozzle.
OPEN
FOG
SFS-200 SOS-G
Exclusive flushing feature makes this the only high pressure fog gun that can be flushed without shutting down. No screen to clog.
Variable gallonage selector calibrated at 10-15-20-25-30 G.P.M. at 100 p.s.i. nozzle pressure. Gallonage can be changed without shutting down the line.
Large, lightweight Pistol Grip makes it easier for one man to operate nozzle.
Free swiveling base at any pressure.
No more "Freeze-Up"—Nozzle is designed to operate at sub-zero temperatures.



Pistol Grip available on other Elkhart Nozzles

Pistol Grip can be ordered on nozzles illustrated. If you have a SFS-200 SOS, SFL-200 SOS, S-200 SOS or a L-200 SOS nozzle in service, Elkhart will install a Pistol Grip at a nominal charge.



SFL-200 SOS-G | S-200 SOS-G | L-200 SOS-G

Ask for a demonstration of this new constant flow fog gun soon. Elkhart representatives throughout the country are equipped and properly trained to put this nozzle into action so that you can learn *first hand* how well it can perform for you. Write today for demonstration and we will see that your Elkhart representative contacts you soon.

ELKHART BRASS MFG. CO., INC.

ELKHART, INDIANA

These men can get into action faster

Here's what they say about hose jacketed entirely with "Dacron":

"We can pack more hose on the trucks . . . and can repack it wet and move out to another call fast. Fire hose of 'Dacron' is lighter and more flexible, too."

CHIEF MILLER,
Madison Fire Department, Illinois

Speed's the thing in a fire. Fire spreads fast. Fire must be controlled fast. And hose jacketed 100% with "Dacron"* polyester fiber can often save you those extra critical seconds.

This is why you'll find hose of "Dacron" in more and more fire houses throughout the country. These departments have discovered the same things as the men above:

- You can save precious minutes. Hose of "Dacron" is light, easy to handle and maneuver.

their fire hose because of "Dacron"®

POLYESTER FIBER

"Feeds off the truck fast. Doesn't slow us down once it's on the ground, because hose jacketed 100% with 'Dacron' is lighter and easier to maneuver."

CAPTAIN DUNLEAVY,
Belleville Fire Department, New Jersey

- You're *always* ready for another fire. Hose of "Dacron" can be repacked wet . . . *can't* be damaged by rot or mildew.
- You get extra economy, too. Hose of "Dacron" stands up under rough abrasion, oils and chemicals; gives you many years of dependable service.

See your supplier . . . or write for nearby sources and free booklet on "The Hose That Needs No Drying". E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., Room 31E, Wilmington 98, Del.

DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . . *THROUGH CHEMISTRY*

*"Dacron" is Du Pont's registered trademark for its polyester fiber.
Enjoy THE DU PONT SHOW WITH JUNE ALLYSON—Monday nights—CBS-TV.

MIDWESTERN

Safety Clothing for Firemen

The Original STRIPED SAFETY COAT

The striped safety coat for firemen is an Original Midwestern development — first in the field — a leader ever since its introduction 19 years ago.

The BRILLIANT YELLOW stripes are actually rubberized into the black rubber . . . an exclusive feature that defies comparison with substitute or imitation models where the stripes are glued, sewed or painted on the material.

When working under hazardous conditions in smoke, fog, dust or darkness, firemen deserve the superior quality, design, comfort and safety features offered by the Original Midwestern Safety Coat.

Many Fire Chiefs who insist on the best of protection for the men of their department specify MIDWESTERN SAFETY garments to the last man because every outstanding Midwestern feature is original. All fabrics are extremely soft and flexible and have the qualities to stay that way at varying temperatures. You can always distinguish a MIDWESTERN SAFETY garment by the soft feeling of the material in both rubber and fabric type garments.

We have always designed and constructed our garments with the one thought . . . that every fireman deserves complete protection in his hazardous work of protecting life and property against the ravages of fire.

COMBINATION BUNKER SUITS

The many weights of both rubber coated and cloth type materials offered in our MIDWESTERN Quick-Hitch suit makes this combination ideal for all sections of the domestic market and export. Also, both coat and bunker pants may be purchased with or without detachable wool linings.

MIDWESTERN SAFETY MANUFACTURING CO.
Mackinaw, Illinois

- ☐ Have Midwestern representative call with complete information and prices.
- ☐ Send Free Catalog and fabric samples.

Name_____

Address_____

City_____ State_____

HOME ECONOMIC WITHOUT THIS TRADE

MIDWESTERN SAFETY MFG. CO., Mackinaw, Ill.
Located in the heart of the Greater Peoria Manufacturing Area
Manufacturers of the Famous MACKINAW Safety Coat

F-5

WW-6

F'N'A

Battery-Pack

DB-2

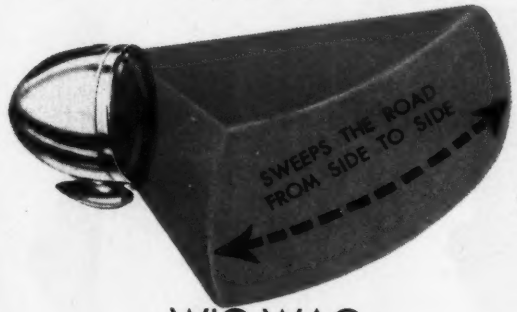
RAD

J-24

AG-23

THERE IS NO SUBSTITUTE FOR POWER . . .

INSIST ON THESE **BIG LIGHTS** for the job of Clearing the way . . . and Fast!



WIG-WAG

Oscillating beam has long 1500 ft. range. Available with big 6" or 8" lens. Cuts down need for siren 80%! Perfect warning approaching intersections.

RAR

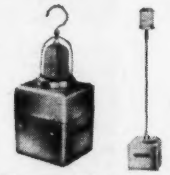
Revolving high-speed beacon with the power you need for today's dangerous runs. Types and sizes for all voltages and vehicles. Ask for special RAR "Descriptive Sheet".

CARPENTER MFG. CO. 952 Bradley St. • Somerville 45, Mass.

FOR COMPLETE SPECIFICATIONS AND PRICES: Send for your Carpenter Catalog

NXA-7

T-3


NRFD NRFX

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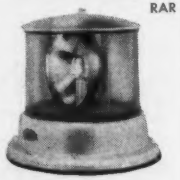
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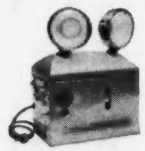
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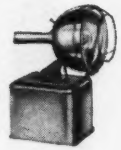
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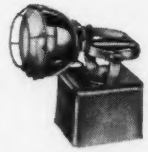

WS-6

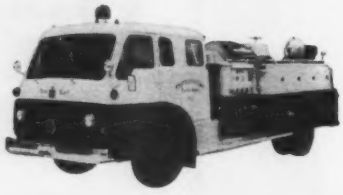
TNT

John BEAN BUILDS THEM BETTER TO

Designed, tested and built for superior performance, John Bean Firefighters have proven their dependability in community service the world over. Engineering "know how", based upon decades of experience, insures rigid quality standards in every unit. Famous Bean pumps exemplify John Bean dependability. The efficient, high pressure pump is unmatched for true, high pressure fog fire fighting. The Class A centrifugal volume pump meets every performance standard of N.B.F.U. tests. Depend on John Bean Firefighters—built better to meet your needs best.

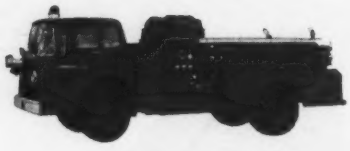
FEATURING ORIGINAL HIGH PRESSURE FOG

John Bean original high pressure fog is a scientific, proven fire fighting method distinguished from all other types. Operating at 850 psi, the rugged John Bean pump produces microscopic fog particles discharged from the patented Bean Fog Gun. Driven at high velocity to the base of the fire, these particles have many times the surface area and heat absorption power of a low pressure stream. So much so that one gallon of water as high pressure fog has the fire killing power of ten or more gallons discharged in a volume stream.



SQUAD AND RESCUE UNIT

High pressure fog fire fighter specially designed for rescue. Ample storage capacity with spacious, weatherproof compartments. 500-gal. water tank.



HPF* FIRE FIGHTER

Ideal for rural fire protection where water supply is limited. Equipped with original high pressure fog*. Full, 500-gal. water tank; compartmentized body.

CLASS "A" TRIPLE COMBINATION PUMPER

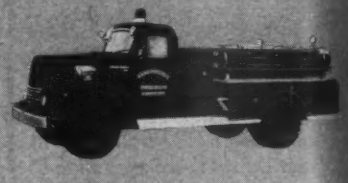
Triple combination pumper with Class A centrifugal volume pump for 500, 600 and 750 gpm performance. Forward control chassis with compartmentized body.

MODEL 400-F

Specially designed for small towns, resort areas, and western range patrols. High pressure fog equipped with two, 200-ft. hose reels; 400-gal. water tank.

MODEL 250-F

Compact, fast and mobile. Fights brush, grass and forest fires on the run with high pressure fog. Compartmentized body; 250-gal. water tank.



FIRE TANKER

Available with 500, 600, 750 and 1000 gal. tanks. Plenty of storage space in the modern, compartmentized body.

*HPF — High Pressure Fog
HPV — High Pressure Fog-Volume (Combination)

for proof of John BEAN Firefighter effectiveness, write today for

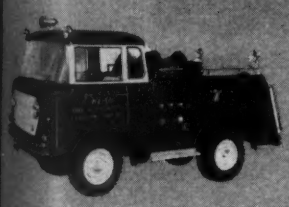
TO MEET YOUR NEEDS BEST!

65′ AND 75′ AERIALS

Dual hydraulic ladder control system for utmost safety. High pressure fog and volume equipped; aerial ladder available in all steel or with steel base and aluminum sections. Hydraulically operated 360° turntable and hydraulic outrigger jacks.

HPV® FIRE FIGHTER

Forward control chassis; 500, 600 and 750 gpm volume capacities plus high pressure fog; compartmentized body; 1600-ft. capacity hose bed; 500-gal. water tank.



MODEL 200-F

Mounted on forward control, Willys "Jeep" chassis with 4-wheel drive. High pressure fog; big hose bed; 200-gal. water tank.

a demonstration in your community

INDUSTRIAL FIRE FIGHTERS

Compact, true high pressure fog fire apparatus for in-plant protection. Designed for tight maneuvering through factory aisles; 200-gal. water tank.

John BEAN®

DIVISION OF
FOOD MACHINERY AND CHEMICAL CORPORATION
LANSING, MICHIGAN • SAN JOSE, CALIFORNIA.

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POWHATAN

DURA-FOG NOZZLE

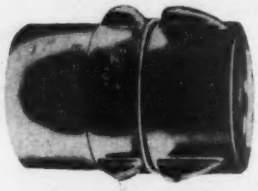
If you haven't tried it— try it NOW!

Gives finer dispersion with less water—fights fire faster. Every nozzle sold gets a 100% performance test. Greater reach with denser fog curtain, foolproof, maintenance free. Try it at our expense.

The "BALL TYPE" VALVE & SIAMESE

Quarter turn against any pressure gives you full stream or complete shut-off. A real heavy duty product for tough fire service. Size: Siamese—2½" x 1½" x 1½", Valve—1½" and 2½". Red body, polished bronze or chromium trim.

"SUPER-FORGE"



Drop Forged

BRASS COUPLING

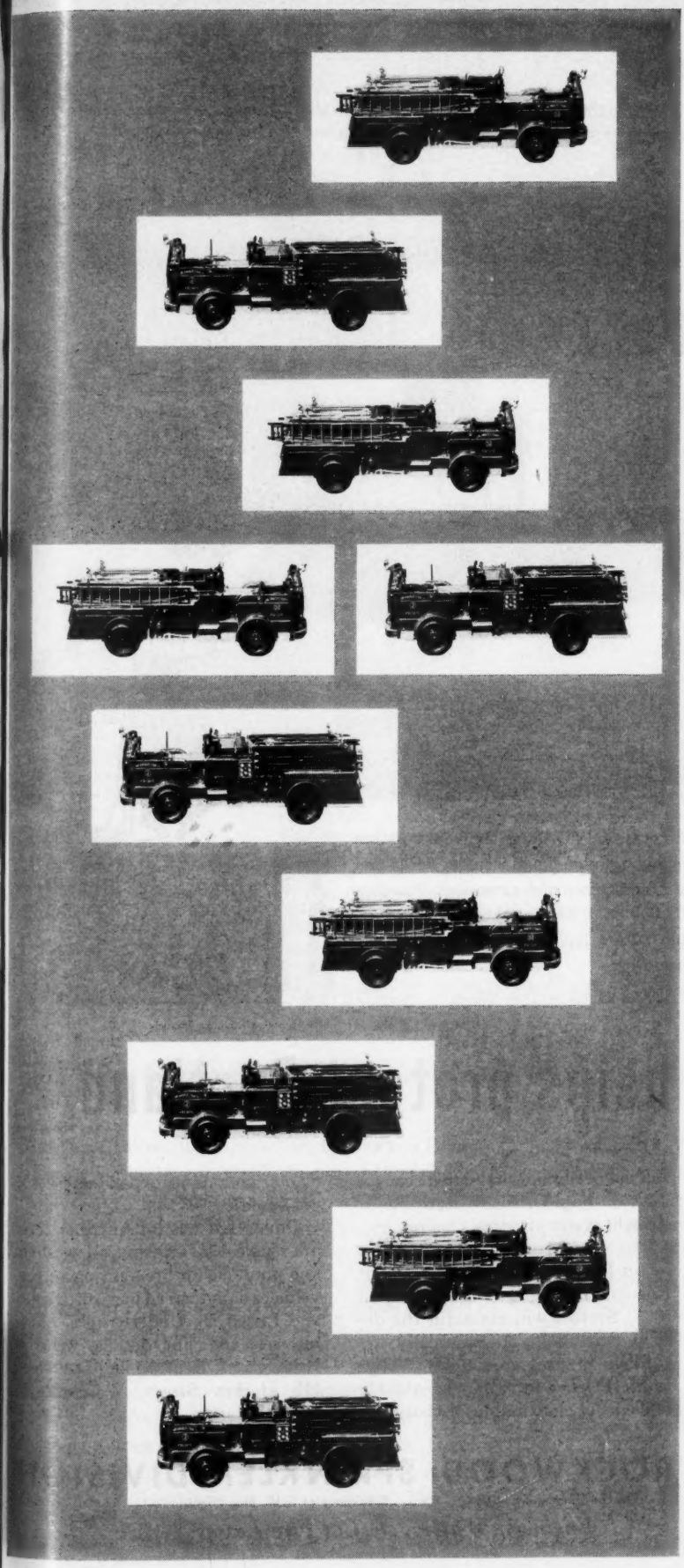
The toughest, tightest, lightest coupling—with three "Sensible Lug" couplings on both male and female. Sizes 1½" and 2½".

POWHATAN

BRASS & IRON WORKS

RANSON, WEST VIRGINIA

In The Same Location Since 1892



KEEPING AHEAD WITH HIGH FOG

The Los Angeles County Fire Department has consistently lead the way in modern fire fighting methods under the direction of Chief Engineer, Keith E. Klinger.

Here are some of the reasons that will help Los Angeles County be ahead when the need is there. Ten 1000 gpm pumpers all equipped with High Fog Pumps are ready for action quickly without the need for laying hose lines to hydrants.

High Fog Pump is proud to be part of the equipment specified by Los Angeles County. Small Size, light weight and pressures up to 1000 psi are only a few of the qualities that make High Fog Pumps desirable for either new or existing equipment.

For information on how High Fog Pump can help modernize your fire fighting apparatus, write the manufacturer.

high fog pump co.

35 SANTA CLARA ST., ARCADIA, CALIF.

On the fireboat *"City of Portland"*, a Rockwood FOAM system with variable automatic proportioning of the fire smothering foam liquid includes Rockwood turret nozzle convertors, hose nozzles, applicators and extensions. Pumping power supplies a continuous output of 7,000 gpm. Smaller photo shows refueling on this boat with Double Strength FOAM liquid through a trough-like funnel into a 250 gallon FOAM storage tank.

Rockwood helps protect Portland

Fireboat's FOAM system provides 3600 cubic feet of fire-smothering blanket — in 3 minutes!

For up-to-the-minute protection of the harbor area of Maine's metropolis, the fireboat "*City of Portland*" carries a Rockwood FOAM system engineered for fast, effective fire fighting.

This Rockwood balanced pressure proportioning system incorporates all latest mechanical developments, including automatic control of FOAM liquid injection, variable percentage selection, individual selection of FOAM or water discharge and use of nozzles that can discharge FOAM, FogFOAM, WaterFOG or straight water streams.

The FOAM metering valves can be set for Double Strength (3%) or Regular Strength FOAM Liquid (6%). System will maintain the desired percentage automatically, regardless of pressure or flow variations. FOAM tank can be quickly refilled for maximum discharge of 82,000 gallons of expanded FOAM per tankful.

Protective advantages like these are typical of Rockwood systems and products for fire fighting vessels, vehicles or industrial hazards. Tested and Listed By Underwriters' Laboratories, Inc. For details, write to ROCKWOOD SPRINKLER DIVISION, 445 Harlow Street, Worcester 5, Massachusetts.

ROCKWOOD SPRINKLER DIVISION

of The Gamewell Company • Subsidiary of E. W. Bliss Company

Engineers Water...to Cut Fire Losses

Distributors in all principal cities

Packed with the fire-fighting power of two new Mack cab-forward pumpers and an expertly trained department, Rural Fire Protection District No. 56, Clackamas County, Oregon, is ready for any call. Recently delivered C-95 Model at right is rated at 1,000 gpm and is equipped with 500-gallon booster tank . . . two electric rewind hose reels . . . 100 amp alternator with 1,000 watt transformer . . . and no-spin differential for greater traction. Model C-85, rated at 750 gpm, has been in service for several months. Both units are powered by famed Thermodyne® 707C engines built by Mack and delivering more pumping power . . . more performance power . . . than anything in their class.

Another wide-awake fire company chooses Macks

Rural Fire Protection District 56, Clackamas County, Oregon, is justly proud of its two handsome new Mack canopy cab-forward pumpers. Since the Macks have been put in service, the district is confident that no comparable-size community in the West is more fully equipped—and more efficiently manned.

Here's why fire departments everywhere depend on Macks. *Custom engineering* . . . Mack delivers the unit that exactly meets *your* needs: cab-forward or conventional models—co-ordinated brake, rear axle ratio and chassis design—famous Mack-built components to surpass your most exacting requirements. *Dependable performance* . . . Mack fire apparatus is made to the highest standards in the industry. For sheer dependability, nothing can touch it. For sustained performance with only routine attention, nothing can match it. You can always depend on a Mack.

Talk it over with your Mack branch or distributor. He has full details on the complete line of Mack quality fire apparatus. Mack Fire Apparatus, Allentown, Pennsylvania. Mack Trucks of Canada, Ltd., Toronto, Ontario.

7936

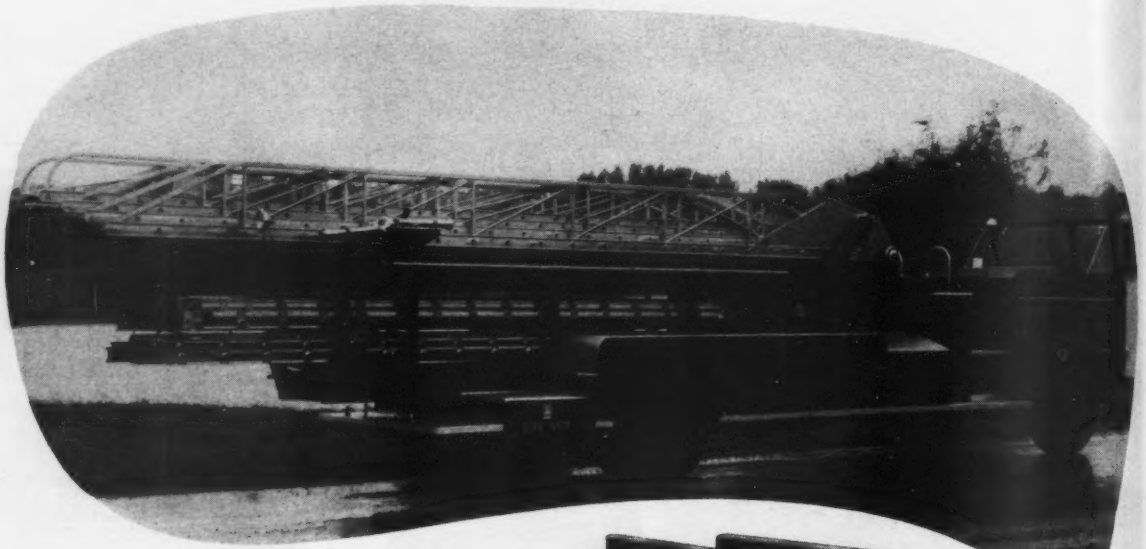
MACK

FIRST NAME FOR

FIRE APPARATUS

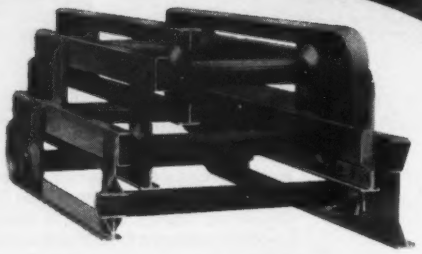
COMPLETE LINE OF PUMPERS—500 to 1250 GPM...SQUAD AND HOSE WAGONS...AERIALS 65' to 146'...COMBINATION LADDER TRUCKS

The Alco-Lite Ground Ladders on this Aerial can help save precious minutes at fires



The above Aerial is a product of The Seagrave Corporation, Columbus, Ohio.

Exclusive Alco-Lite design also results in rungs that won't twist, turn, or break-off. Extension ladders feature channel slides that keep sections



from disengaging. Sections extend, lock and unlock simultaneously. Spring-loaded locks automatically lock extended ladder sections.

Because Alco-Lite Aluminum Ladders, like the extension, straight, roof, and jack ladders on the Seagrave Aerial above are lighter in weight, you save precious minutes handling time at fires. Require less physical effort, too. Exclusive gusset-plate, expansion bushing construction makes possible the open siderail, T-channel design that eliminates extra weight-adding bulk without sacrificing an ounce of strength.

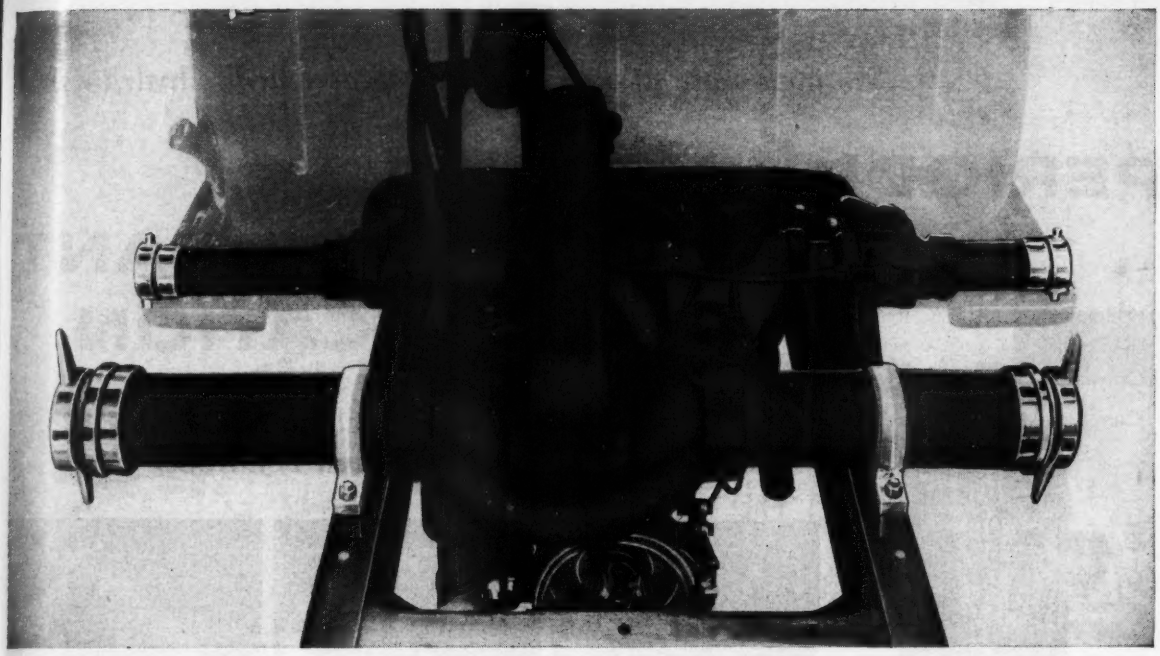
Alco-Lite Ladders more than pass all tests for strength and safety. They can't warp, rot, splinter, or burn . . . are not affected by moisture, fumes, or gases. Maintenance is no problem.

Specify Alco-Lite Aluminum Ground Ladders on your apparatus. They're easier to handle, safe, and require almost no maintenance.

ALCO-LITE

Aluminum Ladder Company

FLORENCE S. CAROLINA

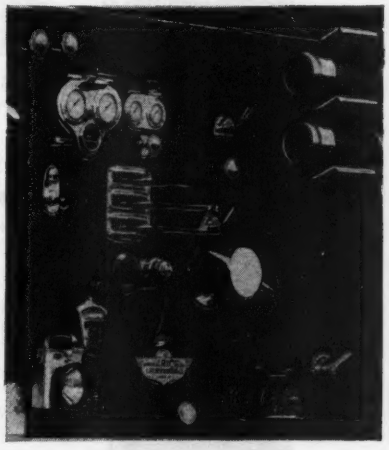


GET 3 BIG ADVANTAGES

WITH THE VERSATILE BARTON-AMERICAN DUPLEX-MULTISTAGE CENTRIFUGAL PUMP

You'll get faster control and higher performance—with a Barton-American Type DMA Pump. These three outstanding design features explain why —and *only* the DMA has them all!

1. In *one* compact pump unit, you have a choice of three pressure and volume selections: High volume at normal pressures, normal high pressures, and extremely high pressures for fog guns. All operate at moderate engine speeds . . . and by merely shifting a *single* lever.
2. Two impellers, *independently* shafted and geared, will operate alone or together in series. Volume pump handles dirty water *without* damage to the high pressure pump.
3. This Barton-American Duplex multistage centrifugal pump has one-point lubrication similar to truck transmission housings. All bearings are bathed in oil inside . . . there's no need for water lubrication.



Typical pump panel. One lever gives you instant selection of *Capacity-Pressure-Series* operation—a Duplex Pump feature.

Yes, these unique, advanced features, plus automatic pressure-operated valves and other advantages provide you with *outstanding* fire-fighting power. For full details, write for . . .

BULLETIN 8733
DMA Duplex Multistage Centrifugal Midship Pumps

BULLETIN 8734
DMB Duplex Four-Stage Midship Pumps

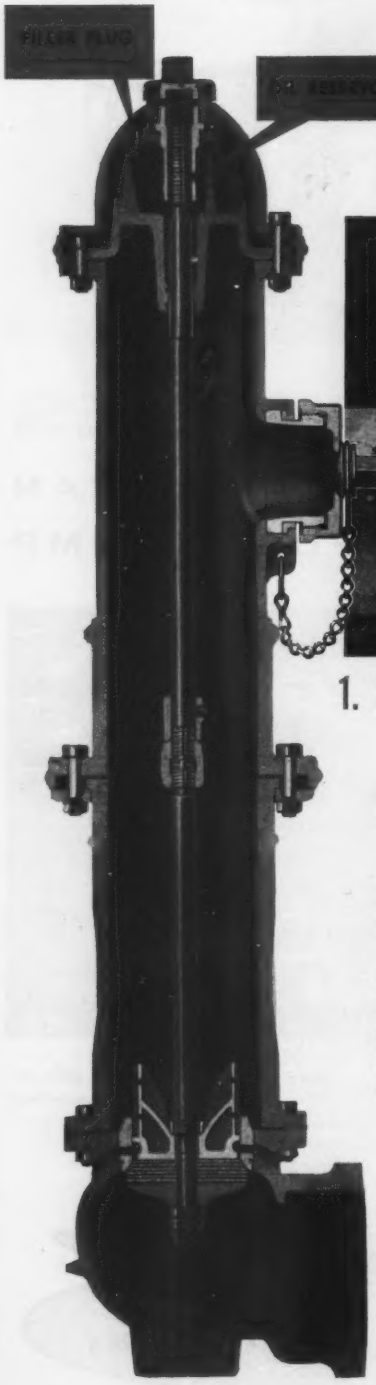
★ AMERICAN ★
FIRE PUMP COMPANY

AMERICAN FIRE PUMP COMPANY • P. O. BOX 219-A • 803 MAIN STREET ROAD • BATTLE CREEK, MICHIGAN

an important 30 seconds in the life of your fire hydrants!

PERIODIC INSPECTION OF HYDRANT LUBRICATION

here's how easy it is to check **MUELLER®** *AWWA Improved Hydrants.*



1. Remove filler plug from oil hole in hydrant bonnet.

2. Insert dip stick into oil hole until it touches bottom of oil reservoir. Withdraw dip stick and note oil level.

3. If oil level is low, add oil and recheck level. Repeat until oil is up to "full" mark on dip stick. Replace filler plug.

■ Designed for minimum maintenance, Mueller AWWA Improved Hydrants have all of the bonus features that count.

The exclusive Mueller lubrication system assures easy, dependable operation by maintaining proper lubrication of all stem threads and bearing surfaces. And it's as easy to check the oil level in a Mueller Improved Hydrant as it is in your automobile!

Dry-top design seals the stem threads and bearing surfaces from water in the barrel during operation. A bronze weather cap prevents water from entering from the top of the bonnet. It also prevents ice from freezing the operating nut and discourages tampering. Add up these "bonus features" in Mueller AWWA Improved Fire Hydrants and you'll see why so many cities and towns have "Standardized on Mueller".

MUELLER HYDRANT LUBRICANT
New 8 ounce can completely fills one hydrant. Plastic filler spout has metal ring to indicate correct oil level and serves as a handy dip stick.

Write for complete information.

MUELLER CO.
DECATUR, ILL.

Factories at: Decatur, Chattanooga, Los Angeles
In Canada: Mueller, Limited; Sarnia, Ontario

5526

one of 62 million reasons why we won't join in the rat race!

Thousands of American schools have sub-standard fire protection. Nursing homes and hospitals that house the aged, the infirm and the sick are often more poorly protected.

Why don't these, of *all* places, have the finest automatic fire protection money can buy?

The answer, of course, is somewhere, *someone compromised protection for price!*

State fire codes set minimum standards . . . but you who hate this compromise . . . you who live and eat and sleep fire protection know there is a wide gap between the *intent* and the *interpretation* of the law . . . that between these poles there is plenty of room for misguided economy.

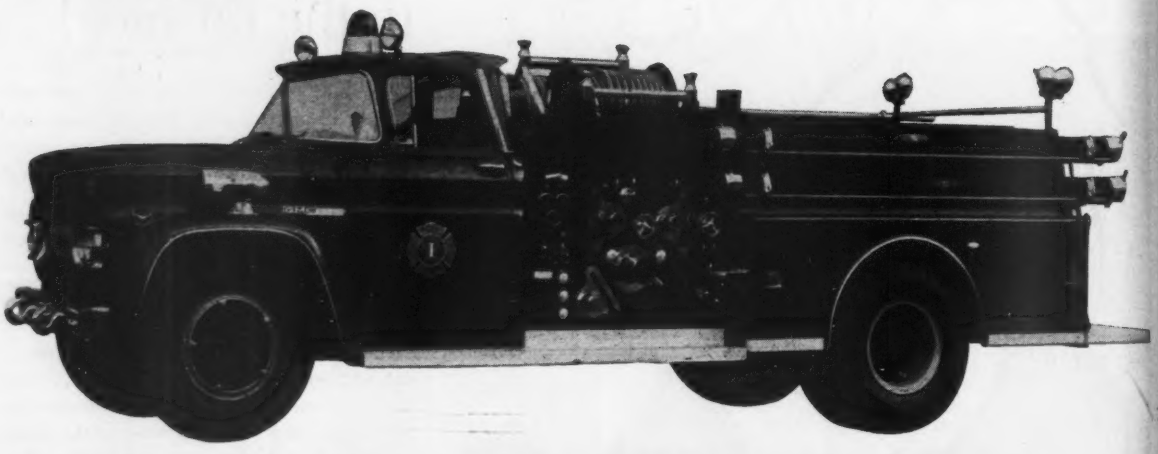
In making fire alarm systems, Autocall will continue to build up to a standard and not down to a price. In short we refuse to join in the competitive "rat race" by building inadequate equipment at the expense of snuffed out lives and burned out jobs.

There are other reputable manufacturers of fire protection systems who feel as we do. You are not alone in your efforts to provide the best in fire protection for your community.

Autocall
SAFEGUARDS MILLIONS

THE AUTOCALL COMPANY
SHELBY, OHIO
SALES OFFICES IN PRINCIPAL CITIES

NEW FROM GMC



1000 GPM CONVENTIONALS— LOWER COST... EASIER IN-AND-OUT!!

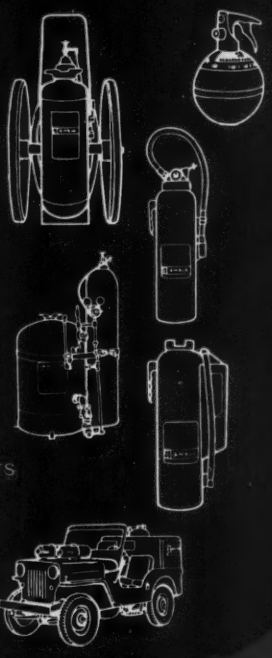
Now when you want 1000 GPM Class A rating in a low-to-the-ground design; high-performance, extended-life V-6 engine with 210 hp; easy-riding, easy-driving independent front suspension; full-width seats; it's all yours at modest cost with new GMC standard commercial chassis and 401 engines . . . and only in these GMCs. Your nearby GMC Dealer listed in the Yellow Pages has complete facts. Contact him today, or write GMC Truck & Coach—a General Motors Division—Pontiac, Michigan.

PUMP 1500 GPM WITH 299 HP.

It's easy with the most powerful standard production gas engine... the exclusive GMC 702 cu. in., 12-cylinder Twin-Six.

GMC
GENERAL MOTORS CORPORATION
TRUCKS

GMC V-6 and Twin-Six engines meet all the power requirements for 500 to 1500 gallons per minute . . . 90″ and 105″ Conventional and 72″ Tilt-cabs.



257 of the 500 largest U.S. corporations rely on ANSUL for basic fire protection. Thousands of other companies, large and small, have found the right answers to their fire protection problems in Ansul's complete line of fire extinguishing equipment.*

*We'll be happy to send our latest catalog describing in detail Ansul's line of hand portable dry chemical, carbon dioxide and water extinguishers, wheeled, stationary, mobile and fixed automatic systems.

Your local Ansul Man is a trained fire protection expert, available to survey your plant and counsel on your fire protection requirements. Call him for an appointment (he's listed in the "Yellow Pages") or write ANSUL CHEMICAL COMPANY, Marinette, Wisconsin.

ANSUL

Fire Equipment
Refrigeration Products
Industrial Chemicals

Fire Alarm box outside the Chester Municipal Building is inspected by Mr. James Gorbey, Director of Accounts and Finances, and Mr. Garry Boden, (right) Director of Public Safety.

Chester, Pa. proves it pays to update fire alarm protection

The $112,000 Gamewell Fire Alarm System modernization completed about a year ago in Chester, Pa., has consistently paid off in increased efficiency and economy.

It has significantly speeded response to alarms and eliminated the cost of faulty alarms due to mechanical and electrical failures. In addition, there have been far fewer service and maintenance calls. Mr. Garry Boden, Chester's Director of Public Safety sums it up this way: "Considering similar equipment available, it is my opinion that Gamewell equipment is the best that money can buy."

The new system is Type B and fully automatic. Its 169 strategically located boxes are on eight circuits, all connected through a central control point in police headquarters. Police and fire headquarters and the city's five fire stations have alarm gongs and tape recorders to indicate box locations. Diaphone horns alert volunteers.

Advance design features assure positive operation. For example, even if outside wiring is put out of action as a result of a hurricane, etc., "pull" boxes will still transmit a coded signal to Fire Alarm headquarters. Mr. Boden feels that his city has one of the most modern fire alarm systems in the nation. Are you as certain of your community's fire protection? A Gamewell Survey will give you all the facts without any obligation to you! Write THE GAMEWELL COMPANY, 1245 Chestnut Street, Newton Upper Falls 64, Massachusetts. *A Subsidiary of E. W. Bliss Company.*

Recent New Installations of Gamewell Fire Alarm Systems

- Chester, Penna., Type "B"
- Las Vegas, Nev., Type "B"
- Alexandria, La., Type "B"
- San Jose, Calif., Type "A"
- Tulsa, Okla., Type "A"
- Yonkers, N. Y., Type "A" (*decentralized*)

BLISS Gamewell®

FIRST...WHEN SECONDS COUNT

FIRE
ENGINEERING
VOL. 113, NO. 11 NOVEMBER, 1960
THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

The National Fire Defense Plan

The recently completed OCDM fire service seminars at four points in this country have been deemed a success by the civil defense officials and fire officers who participated. The purpose of these workshop sessions was to determine the course content of the projected OCDM Fire Service Staff and Command School scheduled to begin in September 1961. As is to be expected at such gatherings, many questions concerning the fire service and civil defense were posed which did not necessarily have a direct bearing on the matters at hand.

One question which invariably arose at the beginning of each seminar concerned the place of all fire protection forces in the OCDM organizational structure. Apparently, this concern stems from doubts that the fire service is properly recognized in the present scheme of civil defense affairs and that in event of a disaster it would be further subordinated. Judging from the words of OCDM Director Leo A. Hoegh, as reported in these pages previously, and from the actions of his aides, this feeling is without foundation and arises due to a lack of knowledge of the civil defense administrative structure.

The OCDM organization is separated into several major divisions, each headed by an assistant director. One of these is the Emergency Community Services which contains fire, police, rescue and similar services which are generally present at the local level and in some cases, at all levels of government. The placement of the fire service under this organization plan appears to be logical. It is on the same plane with all other services responsible for the protection of the welfare of this country's citizens and its duties and responsibilities are outlined in Annex 21, the National Plan For Civil Defense and Defense Mobilization. Perhaps one of the mental stumbling blocks which most persons viewing the overall picture meet is the fact that nowhere in the country is there any state organization or a Federal agency comparable to local fire departments. This lack is at once apparent and, excepting the forestry fire organizations, seems to be a weakness to those who are not closely acquainted with fire fighting philosophy.

Perhaps much of the hesitancy on the part of fire service officials themselves would be dispelled if they would study the provisions of the National Fire Defense Plan and in turn call them to the attention of local civil defense authorities and regional and state fire organizations. While the plan is in a very broad form, it does lay down the essentials necessary for understanding its principles. It is expected eventually several appendices will supplement the plan in order that clear instructions for organization are available.

The guiding philosophy behind the plan is that it functions essentially as present-day fire service mutual aid and that it be carried out with such augmentation as is necessary to meet any conceivable emergency. The cardinal principle is that the local fire chief is at all times in command of his own area and all forces which are assembled to assist him. When the possible fire emergency extends beyond local jurisdiction to encompass perhaps a number of communities, as indeed can be expected in case of nuclear attack, the actions and methods of operation of higher-level fire officers are provided for up to and including the federal level.

To some observers, the projected pattern seems to indicate that a National Fire Service will result if the plan is carried to its ultimate. This is hardly the intention of the National Fire Advisory Committee and definitely contrary to the underlying principles of our national civil defense planning. The framework of civil defense as expressed by all officials presently concerned is to do everything possible to strengthen government on the local level so that its quick recovery in a post attack period is assured in order to maintain our democratic processes in the face of adversity.

Changing the accustomed way of life of our people in regards to government is the policy of those who would destroy us. Contemplating that this will occur once an attack is mounted against us is an admission of defeat and in effect defaults our honor in advance. Such action is unthinkable in these times. The fire service is confident it can meet the future head-on without other qualification and do so within the framework of a system which has made this country the greatest on the earth.

Hon O'Brien

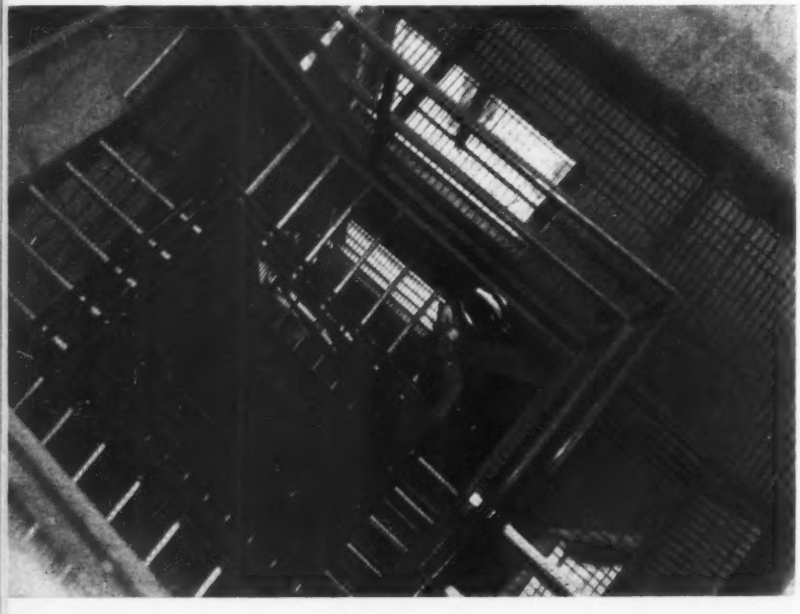
Nozzleman reaches fourth-floor landing in Trial 1

all photos courtesy West Milwaukee, F. D.

Position in Trial 2 at elapsed time of Trial 1

Time study trials of engine and ladder company evolutions

Position of nozzleman in Trial 3 at elapsed time of Trial 1

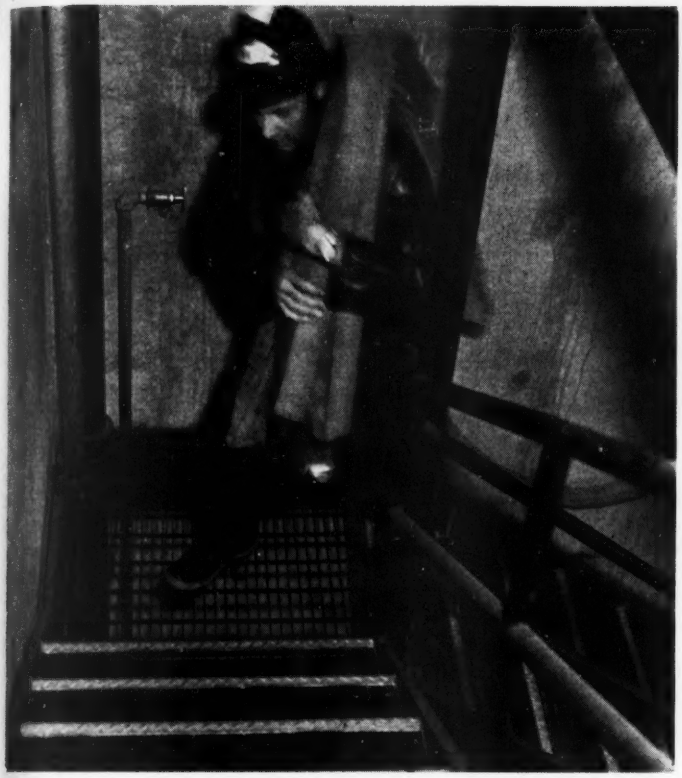


By WILLIAM E. CLARK*

A SERIES of experiments to provide information on manpower requirements for engine and ladder companies was conducted by the research division of the Fire Service Training Program, Wisconsin State Board of Vocational and Adult Education, with the cooperation of the West Allis and West Milwaukee Fire Departments. The problem selected was one which commonly confronts first-arriving engine and ladder companies at a fire on the fourth floor of a building. The fourth floor was chosen merely as a starting point for a series of experiments of which this is the first. Further experiments are being conducted with varying problems.

The only factor actually measured in these trials was time. The given tasks were performed by three, four, five and six-man engine companies and

* Supervisor, Fire Service Training, Wisconsin Board of Vocational and Adult Education.



Nozzleman of three-man 1½-inch hose trial reaches fourth-floor landing in same elapsed time as Trial 1

Wisconsin experiments emphasize proper manning necessary for efficient fire ground operations

three, four, five, six and seven-man ladder or truck companies. This is exclusive of the officer who did not enter into the manual performance of the tasks.

All equipment used was of standard fire service design and the men were clad in full fire clothing (helmet, coat, boots). The firemen, all experienced members of paid fire departments, were not told in advance of the trials or the purpose of them in order to eliminate the possibility of preparation and personal feelings influencing the results. The same men were used for all trials by their departments to eliminate variation that might have been caused by differences in skills, strength, and agility. In order to reduce the possibility of influence caused by performance improvement due to repetition, the positions of the men in the engine company trials were changed at each trial and the trials were not in progressive order, i.e., the four-man trial was held first and the two-man trial second.

It is felt that the problems in each case are typical for a municipal fire department and that the results should provide interesting factual data for those concerned with operations of this type.

The times of each trial have been converted to percentages with the best time taken as 100 per cent and the other times converted to show their relationship. This enables the reader to quickly grasp the relative efficiency. The object of the tests was to establish relative times; comparisons are more easily made when percentages rather than seconds are given.

Study 1

Objective: To determine the relative times required to lay and advance a hose line to the fourth floor using three, four, five and six-man engine companies

Date: May 9, 1959

Time: Between 9:00 a.m. and 11:00 a.m.

Place: West Milwaukee, Wis.

Weather: Daylight, fair

Temperature: 59° F.

Relative Humidity: 46 per cent

Description: The structure used in these trials was the drill tower of the West Milwaukee Fire Department. In each case the hose was stretched up the inside stairway of the tower to the fourth-floor level, 44 feet above the street. The stairs are all metal construction with iron banisters and are of rectangular type, with 12 right angles in the run from the street to the fourth floor. The hose used in the first four trials was double-jacket cotton rubber-lined 2½-inch-diameter fire hose, weighing approximately 65 pounds per 50-foot length. Four lengths were taken within the building. In the fifth trial, 1½-inch hose was used.

The personnel were all members of the West Milwaukee Fire Department which is a small paid, highly trained municipal department operating in a heavy industrial area. The experience records of the men involved show that they have been members of this department for five years.

Equipment: In addition to the above-mentioned hose, a conventional 1,000-gpm triple combination pumper and a 4½-inch-diameter soft hydrant connection were used, and an accurate stop watch registered the times. Hose on the pumper was set up for a fire to hydrant lay with a 1¼-inch controllable nozzle attached to the 2½-inch hose and a variable fog nozzle on the 1½-inch hose. In each trial, the pumper stopped at the entrance to the building and time was started as the men began to remove the hose. Four 50-foot lengths of hose were removed and were folded upon the shoulders of the men who then proceeded to stretch the hose up the interior stairway to the fourth floor. In each case, sufficient hose was taken up the stairway to have 75 feet on the fourth floor. The time of stretching the hose and connecting to the hydrant was taken separately and this time was later included in the overall time. This was done to reduce variable factors to a minimum. The main

objective being to test the relative efficiency in taking the hose up the stairway.

Results: The number of men includes only those who were carrying hose and does not include an officer or pump operator. The time in seconds has been converted to percentages and the shortest time taken as 100 per cent. Times in these trials are for taking the hose up the stairway and does not include driving to and connecting to hydrant.

Trial 1: Four men—100 per cent

Trial 2: Three men — 134.6 per cent

Trial 3: Two men—182.6 per cent

In reviewing the above times, it can be seen that it takes 34 per cent more time for three men to accomplish the work than it took four men and it takes 82 per cent more time for two men to accomplish the work.

When the time required for the pumper to stretch 250 feet of hose to hydrant, and the pump operator to connect the pumper to the hydrant with a 4½-inch soft hydrant connection and start water, is added to the above times, we get the following:

1. Pump operator making all connections unassisted
   a. Three-man company (one at pump, two stretching the hose) time to get water to the nozzle —160 per cent
   b. Four-man company—143 per cent
   c. Five-man company—105 per cent

2. Two men connecting pumper to hydrant
   a. Four-man company—136 per cent
   b. Five-man company—106 per cent
   c. Six-man company—100 per cent

Taking the best over-all time as 100 per cent, we find the relative efficiency of each company to be as follows: The six-man company would be 100 per cent efficient. The five-man company would be 94.3 per cent as efficient as the six-man company. The four-man company would be 73.5 per cent as efficient as the six-man company. The three-man company would be 62.4 per cent as efficient as the six-man company.

It is to be understood that efficiency in this case deals with time only. Other factors were not measured, but could be of importance. For instance, in the trial in which two men had to take the hose up the stairway, their physical condition upon reaching the fourth floor showed signs of extreme fatigue. It would not be advisable for men in this condition to enter a smoke-filled area.

Lone pump operator hooks up soft suction during evolution trials

An additional trial was run using 1½-inch hose instead of 2½-inch. The time to take it up the stairway was considerably less than the time needed with the 2½-inch hose. In this trial, three men took the 1½-inch hose up the stairs. Using their time as 100 per cent, the relationship with the 2½-inch hose lays is as follows:

1. 1½-inch hose—three men—100 per cent
2. 2½-inch hose—three men—146 per cent
3. 2½-inch hose—four men—106 per cent

Observations: Some of the observations made during the above trials were: With the method employed and one man working alone at the pump and hydrant in each trial, the nozzle was at the fourth floor before the man at the pump could start water. With two men making the connections at the hydrant, the time to get water to the nozzle was considerably less, but only in the case when two men took the hose up the stairway was the pump operator able to start water before the nozzle reached the fourth floor. Therefore, it can be seen that three or four men can stretch 200 feet of hose up a stairway to the fourth floor before water can be started, when the pumper has to travel to the hydrant after the hose has been pulled off it, even when two men make the hydrant hook-up.

Considering both time and manpower, the most efficient operation was that involving a five-man company when three men took the hose up the stairs and two men made the connection to the hydrant.

The accompanying photographs show the position of the nozzleman in each of the trials. In Trial 1, the picture was snapped the moment he reached the fourth floor landing. In Trials 2 and 3 the pictures were snapped at the elapsed time of Trial 1, thus showing the relative positions of the nozzleman at this time in each performance. A coupling snagged on the stair in the two-man trial. In this trial the hose could not be laid on the stairs in as orderly a fashion as was achieved in the three and four-man trials.

Trial II

Objective: To determine the time required for a ladder or truck company to perform the following tasks: Raise aerial ladder to roof of five-story building, open scuttle cover on roof; open two windows on fifth floor and four windows on fourth floor; open one window on ground floor and open door from inside on ground floor.

Place: West Allis, Wis.

Date: May 11, 1959

Time: 9:00 a.m. to 11:00 a.m.

Weather: Daylight, clear, temperature 58° F., Humidity 50 per cent

Description: Tasks were performed by members of the West Allis Fire Department. West Allis is a heavily industrial community with a population of about 50,000. The firemen are highly trained, and the experience of the men in these experiments ranged from three to 12 years. The operations were supervised by Captain John Morch, bureau of instruction and training. The following is based on Captain Morch's report:

When two men hook up pumper, the time for each operation is considerably less

Ladder used was 100-foot hydraulically operated metal ladder, tractor-trailer type.

The fire problem as stated was:

1. There was a hypothetical fire on the fourth floor.

2. The building was to be ventilated at the roof, fifth floor and fourth floor.

3. A 35-foot extension ladder was to be raised to a fourth-floor window, if three men were available. This ladder is considered to be a three-man ladder.

4. Forcible entry. Each man was to carry either an axe, Kelly tool or a Halligan tool.

a. On the roof a locked scuttle hole cover had to be opened

b. On the fourth floor, one double-hung window had to be forced to get inside to open the other three windows

c. On the ground floor, one double-hung window had to be forced

The time given for the several trials are for completion of all these tasks. Times are compared on a percentage basis with the best time taken as 100 per cent. In each trial, time was started when the truck came to a stop at a point opposite and 30 feet away from building entrance.

Operation No. 1—To establish the time required for two truckmen and truck driver to do the problem.

One man went to the roof to open the scuttle hole cover and ventilate the fifth and fourth floors. Second man forced first-floor window and opened door from inside—after roof opening, then proceeded up inside stairway with engine company and assisted his partner with ventilation. Thirty-five-foot ladder was not raised because only two men were available.

TIME—168 per cent

Operation No. 2—To establish the time for three truckmen and truck driver to do the problem.

All men prepared the aerial for raising and while the ladder was going up, three men raised the 35-foot ladder to the fourth-floor window. One man then went to the roof to open the scuttle hole cover and ventilated the fifth and fourth floors. One man forced the first-floor window, opened the door and both men accompanied the engine crew to the fire and assisted in ventilation.

TIME—150 per cent

Operation No. 3—To establish the time required for four truckmen and truck driver to do the problem.

Three men raised the 35-foot ladder and assisted in ventilation after one man forced first-floor window and opened door. One man went to the roof to open scuttle hole cover and ventilate fifth and fourth floors.

TIME—114 per cent

Operation No. 4—To establish the time required for five truckmen and truck driver to do the problem.

Three men raised 35-foot ladder and assisted in ventilation of upper floors using inside stairway. One man went to roof to open scuttle hole cover and ventilate fifth and fourth floors. One man was sent to force first-floor window and open door after roof ventilation was completed.

TIME—106 per cent

Operation No. 5—To establish the time required for six truckmen and truck driver to do the problem.

Three men raised 35-foot ladder and assisted in ventilation using the inside stairway. Two men went to the roof to open the scuttle hole cover and ventilate fifth and fourth floors. One man forced first-floor window and opened door and assisted in ventilation.

TIME—100 per cent

The same man was used for the same duties on each operation. For instance, the same man went to the roof and opened the scuttle hole cover five times. The same man forced the first-floor window each time, and the same men raised the 35-foot ladder to the same window in each operation.

The man who opened the scuttle hole cover climbed down from the roof by the cat ladder to the fifth-floor fire escape landing, where he opened the door and two windows. He left by the same door and came down the fire escape to force a fourth-floor window and went inside to open the three other windows.

So that fatigue would not interfere with the time, the men were required to rest 10 minutes between operations.

It is my conclusion that the aerial ladder raising operation slows up the entire procedure. If a fire escape is available, the first man or men should use it to gain access to the roof, while the ladder is being raised. If a minimum of five truckmen man this type of apparatus, plus the officer and driver, wall ladders can be placed while the aerial is being raised.

In a separate test one man was sent to the roof once by way of the fire escape and once by way of the aerial ladder. He arrived at the roof in much less time when he went by way of the fire escape, even though this time included removing a 14-foot extension ladder from the truck and raising it to the lowest fire escape balcony unassisted. The times were:

Via fire escape—100 per cent

Via aerial ladder—144 per cent

We are not attempting to come to any definite conclusions on the basis of these trials alone, but we feel that the information compiled is of value in establishing comparisons of the time factor. It is emphasized that relative efficiency in these trials was measured only on the basis of time. There are other factors to be considered and it should be remembered that other methods of fire fighting may be employed effectively on the same type of problem.

Thanks are given to Chief John Pavlik, Lieutenant James Kargl and the men of the West Milwaukee Fire Department, and Chief Henry Nelson, Captain John Morch and the men of the West Allis Fire Department for their cooperation and effort in making these trials. □□

At Christmas . . . death takes no holiday!

The Jamestown, N. Y., Fire Department publicized fire safety last Christmas by erecting a large sign and lighted Christmas tree at each of its five stations. The bell upon which the tree stands at the central station is a memorial to the volunteers it once called to duty

LAST YEAR 43 persons died as a result of fire during the three-day Christmas holiday and 63 perished over New Year's. Not all of these deaths can be attributed to "Christmas fire hazards." Some of them, however, were the direct result of hazards created in the home, or elsewhere, as part of the traditional observance of Christmas.

For instance, a father and his two children perished in a dwelling fire in Waterbury, Conn., early on New Year's morning. A fire department spokesman said the three-alarm fire started in a Christmas tree, apparently from a defective string of lights.

The following day, five children and an adult narrowly escaped a similar fate when they were trapped in their burning two-family home in Brooklyn, N. Y. However, a passerby, seeing flame and smoke pouring out of all windows, dashed in and up the stairs, and tossed three children through the window to other passersby who caught them. Another passerby led a mother to safety as she carried her three-year-old son. The man lifted a baby from her crib and carried her to safety.

A witness said the house was just a mass of flame. The stucco dwelling, only recently remodeled at considerable expense, was a total loss. Investigation showed the fire was caused by defective Christmas tree wiring.

In Milwaukee, three young sisters fled to safety on the afternoon of January 10 when a Christmas tree, dry and flocked with a highly flammable solution, burst into flames with nearly the force of an explosion, igniting their living room in a matter of seconds. Firemen said the cause was a defective extension cord.

Ridgefield, N. J., firemen work from aerial ladder, piling up discarded Christmas trees which are burned in one big bonfire

Fireworks, too!

Two small boys playing with firecrackers were trapped and burned to death two days before Christmas in a fire that broke out in a hay pile in an old barn near Warner Robins, Ga. Some readers may be puzzled to find a connection between firecrackers and Christmas hazards. However, it is customary in parts of the South to observe Christmas with fireworks.

Just a week before the boys died, a Georgia Circuit judge issued an order directing "all law officers to make special efforts to apprehend those illegally selling, distributing or exploding fireworks." The law contains a loophole, however, in the phrase, "farm use." A majority of the stands selling fireworks use signs reading "for agricultural purposes."

A bill in the Georgia legislature to outlaw fireworks of any kind ran into stiff opposition. Rep. Francis W. Allen of Bulloch County said "the tremendous profit in fireworks" so far has prevented the passage of a really strong fireworks law. Meanwhile, Tennessee expected the quietest Christmas in years in 1960 from the standpoint of fireworks. The Tennessee legislature in 1959 banned all so-called big fireworks.

New hazard

A Memphis housewife was told canned "snow" would spray on the Christmas tree better if one warmed it up. She put a can on the stove and went back to the business of getting her home ready for Christmas. Suddenly there was a blast in the kitchen. "It sounded like dynamite," the housewife said. "It blew part of the stove away, the can was flattened out like it had been rolled on by a steam roller. It sounded almost like a jet when they go through the sound barrier." Fortunately, there was no one in the room and consequently no one was injured.

On the credit side of the ledger, more communities are sponsoring community "Christmas Tree Burnings." The fire department, with the cooperation of civic groups, picks up discarded Christmas trees shortly after New Year's, or encourages citizens to bring their old dry trees to the burning area. Then, usually with music and an air of festivity, the fire department burns the trees in one huge bonfire symbolizing the close of the Christmas season. The community burning encourages citizens to remove the trees from their homes before they dry out and increase the hazard they normally present.

The International Association of Fire Chiefs, 232 Madison Avenue, New York 16, N. Y., and the National Board of Fire Underwriters, 85 John Street, New York 38, N. Y., supply seasonal fire prevention literature to fire chiefs, including suggested editorials for the local newspaper, statements from the fire chief and suggestions for minimizing these seasonal hazards.

O. S. Ball, fire warden of Stanislaus County, California, with the cooperation of the County Superintendent of Schools, has for the past several years distributed a pamphlet of Christmas safety suggestions for teachers and administrators. The brochures were sent to more than 40 schools and to 575 teachers and administrators.

As the National Board urges, "Keep the Christmas season merry; reduce the fire toll."

A charred tree with blackened toys and gifts, from West Milwaukee, Wis., "before and after" displays, dramatizes Christmas fire safety

Greenwich Country Club Lost After Explosion

A pre-dawn fire on September 5th routed 42 persons from their beds and destroyed the three-story clubhouse of the Greenwich Country Club at Greenwich, Conn., causing damage estimated by Fire Chief Stuart M. Potter at between $750,000 and one million dollars. Kenneth Singer, a resident of the club, and Civil Defense director at Greenwich, alerted the other occupants when he smelled smoke. All fled the structure safely. Firemen had to help one elderly couple from a second-floor room by ladder.

Fire officials said the blaze started shortly before 4 a.m. apparently in the basement where the kitchen and grill, conference, storage and locker rooms are located. Chief Potter said an air conditioner had apparently exploded from the heat. Flames then came through the floor of the grill room, and the building quickly turned into a mass of flames. During the height of the fire a 50-foot chimney toppled to the ground. Firemen were able to save an adjoining building, containing handball and squash courts. The structure, a recent addition, was connected to the clubhouse by breezeways. The golf house, 200 feet away, was not touched by the flames.

Three fire fighters were injured when a wall blew out in the basement, as they were searching for the source of the blaze. Six others of the 100 fire fighters were overcome by smoke and Chief Potter required hospital treatment for an injured foot.

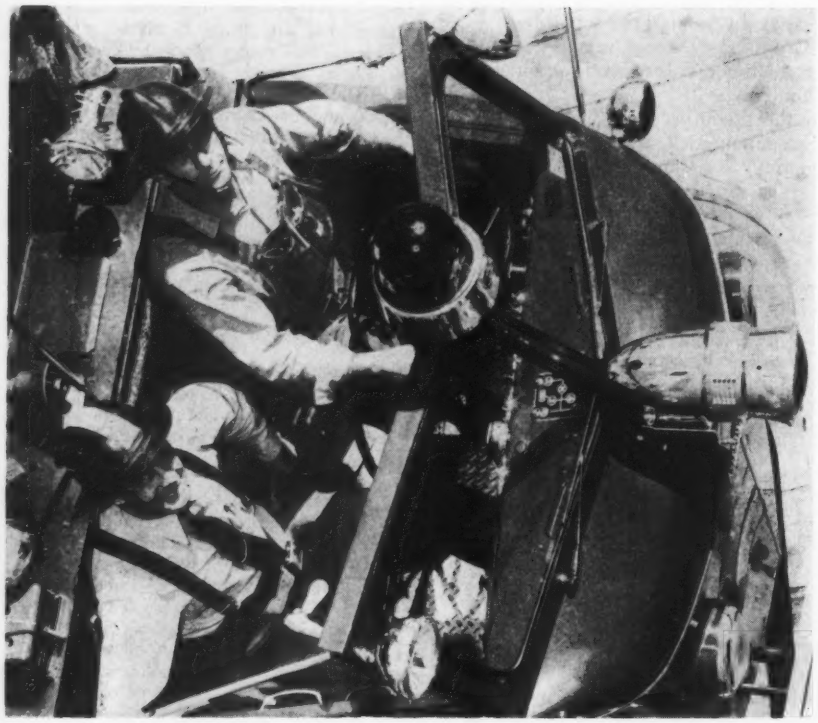
Club members said it was the third time their clubhouse burned down. The first fire was in 1907, and the second in 1927. The building destroyed in the recent fire was opened in 1927. Chief Potter said the firemen, hampered by lack of water, used the club's private supply of water, and a Greenwich Water Company hydrant half a mile away.

Tom Magner

Erie, Pa., Fireman Dies While Fighting Fire

Stephen J. Romance, Jr., 41, an Erie, Pa., fireman, died while fighting a warehouse fire early on October 10. The deputy coroner said that all indications were that Romance died of a heart attack. On learning of his son's death, the father, Stephen J. Romance, Sr., also suffered a heart attack. The fire department's inhalator squad worked over him for 30 minutes. He remained at home after treatment.

Deputy Chief John Fitzgerald, who directed the fire fighting operations, said the warehouse blaze was apparently started by a bonfire in the rear of the building, which spread to the side and eventually climbed to the roof. He theorized that the bonfire was started by vagrants, who frequently have made this area a hangout. The fire caused total damage of $16,000.



Captain Walter Williams and Driver Verle Hatton of Engine Co. No. 1, Colorado Springs Fire Department, demonstrate newly installed seat belts
—*Colorado Springs Gazette Telegraph photo by Stan Payne*

STAY ON THE RIG

Part 2—The use of seat belts on fire apparatus

By LESTER L. WILLIAMS, M.D.
Colorado Springs, Colo., F.D.

ONE OF OUR initial statements dealt with the necessity for speed of fire department response. Will fastening or releasing a belt materially delay firemen? In July 1955, the Chicago Fire Department began a program of installing seat belts. This came about as the result of the death of three firemen in the previous year, all of whom would have been saved by belts. One tillerman had been thrown from a truck and killed, two firemen were killed when thrown off pumpers, and in addition, a battalion chief had been seriously injured when thrown out of his car.

Before installation of belts was undertaken, some tests were made to determine how much time was required to fasten or release a belt. In Chicago, a squad is a company equipped for heavy rescue, operation in bad atmospheres, employment of heavy streams, and general utility work. Because it is a company of vital importance, and its response must be rapid, it was selected for these tests. When a squad was equipped with seat belts, it was found that no real difference was made in its speed of response. As a result of this conclusion, all squads and all tiller seats were equipped with belts, then the program was expanded to include all rolling stock of the Chicago Fire Department. After four years of experience with belts, First Deputy Chief Fire Marshal James Bailey of Chicago writes: "In my opinion, no delay in response is caused by the use of a belt."

To speak specifically of fire service hazards, the risk of ejection is even greater in open fire apparatus than closed automobiles. In FIRE ENGINEERING for December 1958, Commissioner Paxton Mendelssohn of Detroit wrote of the increased safety offered by their completely enclosed limosine-type equipment. He reported one wreck where a limosine-type pumper skidded 100 feet, rolled over twice, and came to rest on its roof. Only two of the crew needed first aid, the other four were back on duty with a spare engine within two hours. Proponents of open apparatus claim the advantage of better vision for size-up, more accurate spotting of aerial trucks, and freedom from fogging of glass in bad weather. A round table discussion in FIRE ENGINEERING during 1956

AUTHOR demonstrates lap belt and shoulder harness in car. Note lap belt is threaded through joint between seat and back, then is anchored to floor pan of car. Shoulder or chest strap is secured to door post, passes diagonally across chest, then is anchored to lap belt over right hip. In a crash it is calculated that lap belt restrains about five-sixths of body weight, and cross-chest strap takes about one-sixth, or just enough to prevent body jackknifing forward to allow face and head to strike steering wheel, instrument panel, or windshield
—photo by Lester L. Williams, M. D.

compared experiences and opinions of fire chiefs regarding the relative merits of open as opposed to closed apparatus. The majority of chiefs agreed that with closed cabs the men are safer, and that there are fewer accidents for the miles traveled. In either closed or open apparatus, if the crew riding on seats could be kept in their seats in the event of a crash, decreased chance of injuries would be anticipated in the vicinity of the 85 per cent figure obtained from the Cornell paired crash study.

Belt important for driver

Of all men on a piece of apparatus, it is most important that the driver keep his seat. If he loses his seat from a minor collision or bump, then he loses all control of the vehicle and a worse crash may develop. If he can retain his seat he may be able to retain or regain control of the rig and avoid a crash. How can he keep his seat? By being strapped in with a good belt.

For the purpose of keeping passengers in their seats in any accident, the seat belt is a compromise. One limitation of the lap belt is that in a crash the body pivots forward and the head may still hit the instrument panel. The lap belt restrains the lower part of the trunk, keeps the center of gravity low, and prevents most of the weight of the body from driving the head and face into the instrument panel or windshield, so that such a blow is lessened in intensity, but it is not prevented entirely. The seat belt is highly effective in preventing ejection through the windshield or a door sprung open. It will be effective in preventing or limiting the extent of injuries in most moderate crashes up to about 20g.

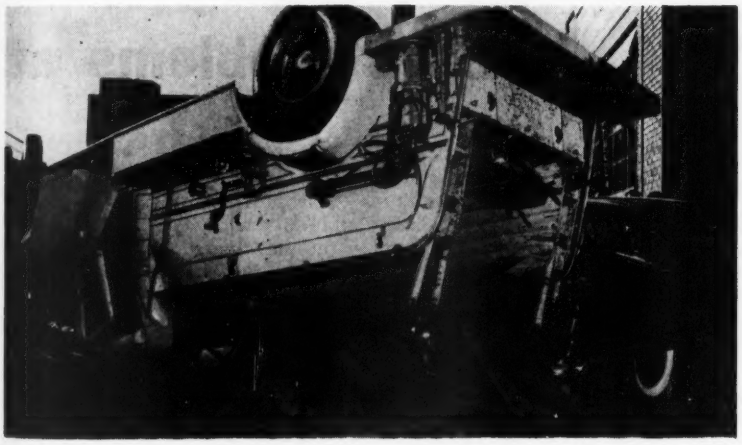
For more severe crashes, with greater deceleration, further restraint is needed, and this calls for a shoulder harness. The writer has a combination shoulder and lap belt in his personal car, and it gives a very satisfying sense of security, for when so anchored, a person's body can't move far in any direction. Usually new ideas are easier to take in small doses, so for the present it is merely urged that the men of the fire service take advantage of the tremendous protection offered by such a simple gadget as the seat belt.

If we accept the conclusion that restraining a man in his seat will reduce the chance of injury or death in the event of a traffic accident, and if a seat belt is a fairly satisfactory compromise to achieve this end, then what are the requirements for an acceptable belt? A new Federal Government specification calls for belts with 5,000-pound looped strength. The belt should be of 2-inch wide webbing. Since a chain is no stronger than its weakest link, the mounting of the belt is of paramount importance. The belt should never be attached directly to the seat unless the seat has been constructed to withstand the pull of the seat plus passenger in a crash. Most passenger car seats break loose in a crash. Therefore, the seat belts are usually threaded through the joint between back and lower seat cushions and attached to the floor itself. Originally, belts were anchored to the frame, but it has been found better to mount the belts on forged eye-bolts through the floor pan which is reinforced on the lower side with 2-inch-diameter washers. In a crash the pull of the belt deforms the floor pan upward, this acts as a spring and absorbs energy, permitting 25 per cent greater deceleration without putting excessive stress on the belt. In no known survivable crash has a belt anchored in this way pulled out.

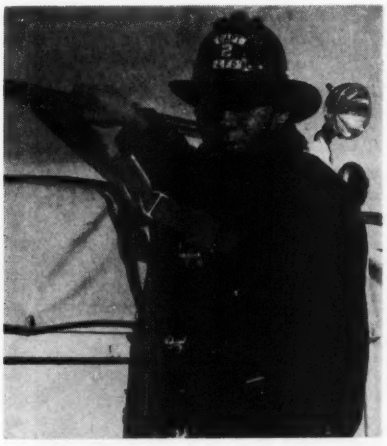
Objection may be raised that firemen will not use belts after they have been procured and installed. Men in the fire service are accustomed to facing danger, but there is nothing gained in assuming uncalled-for risks. The whole purpose of this discussion is to help the fireman avoid the hazard of injury from traffic accidents and thereby arrive on the fireground fit and ready to save lives and property from fire. There are enough risks right on the fireground. I believe that if the entire subject of the use of seat belts is presented to a group of firemen in a logical and factual manner, they will accept and use the belts as they were intended. Of course, this can be reinforced with a direct order.

Recently, the Colorado Springs Fire Department installed the highest quality seat belts obtainable on the front seats of all rolling stock. To the best of my knowledge, there has been no difficulty in securing compliance with the rule that the belts will be fastened

Continued on page 1078



On March 20, 1960, this hose wagon, Engine No. 5 of the Denver Fire Department, was involved in a collision at an intersection. The wagon overturned, the right door was sprung open, the captain thrown out, then killed as the rig rolled on him. Note that the cab is not collapsed and the passenger space is preserved



Captain Robert Newcomm of the Lakewood-Montair Fire Department, demonstrates belt to secure plugman on rear step of pumper—photo by Lester L. Williams

Fallen debris continues to blaze as fire fighters concentrate efforts on extinguishing church fire

Proximity of church to factory is evident in this view. Note steam rising from hot pavement and burning auto near utility pole

Utility poles, cross arms and wires on opposite side of street burn from effects of radiated heat. Note damaged auto near base of pole

Radiant heat poses problems at

New Haven Ladder Company members placing ladder pipe in operation during early stages of fire. Roof of church smokes and burns from effect of heat

RADIANT HEAT from a fully involved factory under demolition in New Haven, Conn., extended fire across a 30-foot street on Monday, August 29, and severely damaged an exposed church. Four alarms were necessary before the fire was brought under control.

A demolition company was in the process of tearing down the building at the corner of Chestnut and Chapel Streets, which is in the Wooster Square Redevelopment area. In preparing this building for demolition, the company had removed all of the windows and doors, and were using an acetylene torch to cut up the fire escapes and piping. It has not been established that this was the cause, for other fires in empty buildings in this area had occurred previously due to carelessness and vandalism.

The building was of six story brick construction with wood joists and flooring. It was originally built as a piano factory and in later years converted to multiple occupancies of various manufacturing concerns. It was "L" shaped with approximately a 50-foot frontage on Chapel Street and a 200-foot depth on Chestnut Street.

The fire was discovered by the wrecking crew and an effort was made to extinguish it with pails of water before an alarm was sounded.

The fire department was notified at 11:30 a.m. by several calls coming in at the same time from the area. First arriving company (Engine #4) transmitted a 2nd alarm at 11:32 a.m., and the deputy chief sent in the 3rd alarm at 11:34 a.m. The 4th alarm was transmitted at 11:43 a.m.

Building fully involved

The building itself was fully involved when the members of Engine #4 pulled in, and they began immediately to stretch a 2½-inch line to the Chestnut Street side of the building facing St. Louis Catholic Church. The company had taken a hydrant on Chapel Street west of Chestnut Street. In a short period of time this unit had to abandon its position and move the apparatus because of falling walls.

Engine Company #2, a 1250 g.p.m. pumper coming in on Chapel Street took a hydrant 150 feet east of the fire building and operated from there pumping into three 2½-inch lines, supplying a portable deluge set, and hand lines. Engine Company #12, third due company on the first alarm, took a hydrant at the corner of Chapel and Wooster Place, which is due east of the fire building and pumped four

Scene which greeted first arriving companies; lack of windows and roof permitted wind to fan flames to terrific intensity

New Haven factory fire

Falling walls create additional hazards to fire fighters during fourth-alarm blaze

By CHIEF THOMAS J. COLLINS

2½-inch lines into a ladder pipe and a deck gun unit. Truck Co. #1 positioned itself in front of the St. Louis Church on Chapel Street at the northeast corner and set up a ladder pipe to cool off the roof of the church which had already started to burst into flame from radiated heat.

Within a short time the church roof (slate over wood) and wood window frames began to burn briskly from the intense heat of the burning factory building. Hand lines were moved into position in the church interior and into the balcony area just below the blind attic. Despite the torrents of water poured into this section, the roof began to collapse in a brief period.

The width of Chestnut Street at this point was approximately 30 feet and thus the radiated heat easily set the church afire. At the same time the school building to the rear of the church was being subjected to intense radiated heat as well as an adjoining frame house. By diligent maneuvering of hand lines and deck gun units, these flames were quickly knocked down and damage to the school was limited to window glass and frames on the side facing Chestnut Street.

By this time the factory building was beginning to collapse and with this the intense heat began to dissipate. A number of fires were started in an area several blocks from the blaze, by flying brands. Companies on the scene were kept busy taking care of these.

At the height of the fire there were ten Engine Companies in operation pumping twenty-two 2½-inch hose lines and two 1½-inch hose lines. The latter were used to cool off the apparatus of Engines #3 and #4 which were exposed to the intense radiated heat.

Fourteen injured fire fighters were

Continued on page 1067

Chronology of Operations

Time—11:30 A.M., Monday, August 29th, 1960
Weather—Clear, hot and humid. Temp. 78 deg., Humid. 84%, Wind 10 SSW.

First Alarm: 11:30 A.M.

Engine #4—Pumped 2—2½" lines from hydrant on Chapel St.
Engine #2—Pumped 3—2½" lines from hydrant on Chapel St.
Engine #12—Pumped 4—2½" lines from hydrant on Wooster Pl.
Truck #1—Operated as water tower on Chapel in front of church

Second Alarm: 11:32 A.M.

Engine #7—Pumped 2—2½" lines from hydrant on Wooster St.
Engine #8—Pumped 3—2½" lines from hydrant on Franklin St.
Deluge Unit—Operated in front of church at Chapel and Chestnut
Truck #6—Assisted in getting portable deck gun in operation

Third Alarm: 11:34 A.M.

Engine #3—Pumped 2—2½" lines from hydrant on Chestnut St.
Engine #10—Pumped 1—2½" line from hydrant on Franklin St.
Deluge Unit #3—Located on Chestnut St. near Engine #3 pump
Truck #3—Located on Chestnut St. south of Chapel and used hand line inside church and operated deck gun unit
Rescue Truck—Located on Chapel St.

Fourth Alarm: 11:43 A.M.

Engine #6—Pumped 3—2½" lines from hydrant on Chestnut at Greene
Engine #17—Used all of its hose then pump was sent to Central station repacked with hose and equipment and placed in service with off duty personnel
Truck # 2—Located on Chestnut Street and assisted in getting hand lines in operation on spot fires in adjoining factories and also on the church

Middletown firemen Joseph Hennelly and Charles Rempo (with jackets) receiving instructions from personnel of Newark's Truck #5 on the attachment of a portable ladder pipe to aerial

Edward Ross, fireman at Salvage Co. No. 1 (left), demonstrates the use of salvage covers to Middletown Township firemen Charles and Roger Dolan during one of the week-end training programs

Alfred W. Smith, wearing mask, receives instruction from Captain Robert Shnering, Engine No. 20 (right). Looking on is Newark Deputy Chief G. W. Shaeffer and William Ogden, trainee

New Jersey volunteers get on-the-job training

Newark Fire Department cooperates to provide week-end instruction

Captain William Juliano, of Newark Rescue Squad No. 1, instructs Middletown firemen August Dreyer and Edward Seeley on the use of self-generating mask and ammonia suit

By RICHARD W. SEUFFERT*

KEEPING VOLUNTEER fire department personnel abreast of the latest developments and techniques in fire fighting, can be simplified where good cooperation exists between paid and volunteer forces. In one excellent example Middletown Township, N. J. firemen, are participating in an in-service training program at the Newark, N. J. Fire Department.

The program provides New Jersey's largest volunteer fire department the use of outstanding diversified training facilities with the assignment of men to various Newark Fire Department units on weekends. Personnel report to Newark fire companies on Friday evening and remain there until Sunday evening. The men are given assignments the same as if they were regular members of the Newark department including response to fire alarms and other emergency calls.

In order to provide as much diversified training as possible, weekend contingents are assigned, two men to an engine company, two to a truck company, two to a salvage unit and the remaining two men to the department's rescue squad.

This group instruction and actual participation in fire fighting and rescue operations provides the Middletown personnel with the most practical and realistic on-the-job training. Returning trainees then disseminate their newly acquired findings to fellow firefighters in Middletown's eleven volunteer companies headed by Fire Chief Elwood E. Seeley.

The program was initiated by the author who was employed as a Newark fireman while attending Seton Hall University, and Harry J. Sommers, recently retired Chief Engineer of the Newark Department. Through the cooperation of Frederick Waidelich, Newark's present chief, the program will continue into its second year this fall. □□

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* *Business Administrator, Middletown, N. J.*

Fighting Subway Fires PART II

By RICHARD A. DENAHAN and CHARLES V. WALSH
Assistant Chief *Deputy Chief*
New York Fire Department

PROCEDURES that may have to be followed in covering the life hazard at a subway fire are unique in one respect. The commanding officer may frequently recognize the presence of a severe hazard and start covering it before he knows the location of the fire. Ordinarily, in covering life hazards at a structural fire, the officer can, and should, know the location of the fire so that he can determine how and where endangered occupants may be cut off from escape. He can then place lines, ventilate, and use such other tactics as may be advisable in view of the known facts. At subway fires, however, the life hazard may require so much attention and effort by the personnel on hand that the fire itself may not be located until the arrival of greater alarm units makes possible an effective effort. The extent of most subway fires is such that seldom is more than one hose stream or its equivalent required for extinguishment. While the fire may be minor as judged by actual extinguishing effort, the potential effects of the products of combustion place it in a category other than that of minor fires. Some of these fires give off large volumes of dense, acrid, smoke for a long period of time. This period may be prolonged when subway personnel try to fight the fire and are unsuccessful.

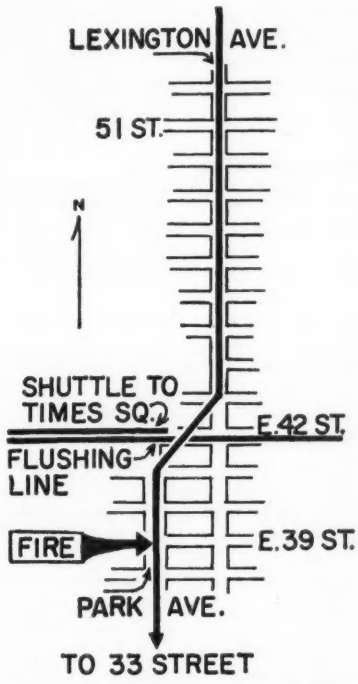
In sizing up a subway fire, it should be remembered that moving trains and the mechanical vent systems serving the subway may spread the smoke hazard over a wide area. The fact that there may be several critical points is one of the things that complicates decision-making for the commanding officer. It takes some time to check a large, sprawled-out area. The reconnaisance procedure used at the fire discussed in subsequent paragraphs is simple and has proven effective. Undoubtedly, there are other procedures equally effective and it is advisable for each department to develop in advance, several of these alternatives.

Communications

Unusual problems in communications may complicate the operation. It scarcely seems necessary to mention that a good communication system is a must at a subway fire. The commanding officer is completely dependent on such a system for receiving information and giving orders promptly. The lack of effective communication will nullify the best strategy that can be devised. It is suggested that the media of communicating used by various departments should be checked for underground limitations. It may be found that some of the devices are not efficient when underground or that a relaying arrangement may have to be used. Difficulties in trying to communicate via portable radio units were experienced at both fires mentioned here. Obviously, it is better if the officer assigned to investigate and report on a subway fire condition, can transmit information without having to take his mask off, and some rescue companies carry masks equipped with speaking diaphragms appropriate for use with sound-powered telephones. This is an ideal medium for communicating at these fires. At least 400 and preferably 600 feet of wire on reels are suggested for use with sound-powered telephones.

Some subway systems have telephones at the ends of each station and spaced from 400 to 600 feet apart along the trainways. When used, a direct line can be provided to fire headquarters. However, more direct contact between the fire area and field headquarters is preferable. In some emergencies, it is possible that sole reliance must be placed on messengers between the fire scene and field headquarters.

There should be a clear and definite understanding between the transit authorities and fire departments relative to requests to shut down the power at subway fires. Obviously, immediate compliance with a request to shut down power is not expected when such action may disastrously intensify the life hazard. The fire department makes such a request in the interest of passengers who need to be rescued and of the fire personnel who will perform the rescue work. In filling these requests, it is assumed that the transit authorities will endeavor to check on trains approaching, within, or leaving the affected area so as to give them time to clear or back out before the power is shut down. This is particularly expected when the fire is in a tunnel under a river and the emergency exits are far apart.



Location of Grand Central debris fire

Emergency alarm boxes that operate in somewhat the same way as fire alarm boxes, are located on the west walls of the New York trainways. They are from 400 to 600 feet apart and are indicated by a blue light. Pulling such boxes immediately opens the circuit breakers in the feeders supplying power to all the rails for the full length of that particular feeder section.

The Independent subway system in New York has an additional feature—blowers which start automatically with the pulling of such boxes, to discharge the smoke to the street, with fresh air being drawn in through adjacent stations. If warranted, such as when passengers are in panic and rushing to escape via the tracks, such boxes should be pulled. However, consideration should always be given to the possibility of stalling trains loaded with passengers in a dangerous spot. The ventilating system will

not alleviate the smoke and heat conditions at once. In some of the lower tunnels, it takes 15 minutes to renew the air there. A crucial situation could develop in much less time than that.

When there is any reasonable doubt, it is felt that the transit authorities should be requested to shut down the power on the assumption that they are in a better position to know the location of trains and can use their discretion accordingly. If no delay is warranted, the transit authorities should promptly comply with the request of the fire department.

Grand Central Fire

Checking for information followed a different pattern at the debris fire than at the escalator blaze. A decision had to be made after a quick survey of the Grand Central area indicated heavy smoke in the Lexington Avenue stations and passageways on the west side of these stations was creating a severe life hazard. The decision, of course, was to concentrate the efforts of all personnel to cover the life hazard. This action necessarily caused a delay in discovering the location of the fire itself until the arrival of greater alarm units. A box was pulled at 41st street and Park avenue and the regular assignment responded. The smoke issuing from the gratings did not have much push or volume but its odor indicated the possibility that insulation of some kind was burning. The temperature of the smoke was warm but not hot.

The deductions based on these perceptions were clarified to some extent by people emerging from the subway at 41st street and Park avenue. They stated there was no panic but that the smoke condition on the Grand Central station was bad. As mentioned previously, operations cannot be based on information given by civilians but neither can it be ignored. In this case, and due to the absence of anything else to go on, the information was tentatively accepted and acted upon with the mental reservation that necessary changes would be made as warranted by subsequent reports from fire personnel.

The steps taken in covering the life hazard in as chronological an order of occurrence as possible, were as follows:

1. Battalion Chief Francis W. Voosen, Eighth Battalion, entered the subway at 41st Street and Park Avenue with a ladder company. Due to information given by people coming out of the subway, a second ladder company was assigned to him. In accordance with information received from Chief Voosen, two other first alarm companies were assigned to operate under his command, now busily occupied in removing passengers from two northbound trains stalled while approaching the Grand Central station. Second alarm units soon supplemented the assignment to this command.

2. Battalion Chief John T. O'Hagan, Ninth Battalion, was assigned to make a survey of the area in his car and report on what he considered the next most logical point of operations. He soon reported a serious condition developing at 42nd Street and Madison Avenue. The smoke was traveling underground north to 42nd and then west under 42nd Street. The battalion chiefs had pin-pointed the crucial areas in excellent time, considering the circumstances.

Upon receiving Chief O'Hagans' report, a first alarm engine company and the rescue company were assigned to his command, as was the squad company which had been special called. Subsequently, this command was supplemented by second alarm units. Passengers in the train which shuttles on 42nd Street between Grand Central station and Times Square, and passengers trying to make their way to the street via passageways west of Grand Central station were assisted by units under the command of Chief O'Hagan.

3. The Transit Authority was requested to shut down the power so that trains would not continue to enter the area and discharge passengers at the smoke-affected station. However, two northbound trains were stalled by the power shut-down as they approached the Grand Central station. Fire personnel under Chief Voosen removed passengers from the forward cars where the smoke condition was more severe; passengers in the rear cars were given the option of remaining where they were or of walking to the 33rd Street station with the assistance of fire personnel. Except for the fact that only emergency lights were on, the conditions in the rear cars were practically normal since these cars were south of the fire and the prevailing draft was taking the heat and smoke away from them.

4. Five ambulances were special called by the officer in command based upon information received from battalion chiefs. This call was made before any victims had been brought up to the street.

5. The Mask Service Unit responded to administer oxygen, distribute mask canisters, and replace used mask cylinders.

6. Fire personnel assisted in first aid after passengers had been removed from the subway. In such work, the resuscitators of rescue companies are invaluable.

7. A second alarm was transmitted to insure adequate manpower in view of the extensive life hazard.

8. The Disaster Medical unit, amply staffed by doctors, nurses and medical assistants, responded.

At the same time, all available police, including the Transit Police, converged on the area and assisted in the rescue effort.

Extinguishing Operations

With rescue work well under way, the fire was sought and located about 600 feet south of the Grand Central station on the left side of the southbound express track. Shortly after the arrival of the fire department, and unknown to it, powerful exhaust fans were started which did much to pull the heat and smoke of the fire north to the Grand Central station and then west through the 42nd Street passageways. This naturally worsened the life hazard there. It also made it difficult to reach the seat of the fire since it was necessary to approach the blaze by proceeding south from 42nd Street. However, there was little choice since there was no emergency exit between the Grand Central station and the next station on the south side (33rd Street). Generally, there is at least one such exit to the street between stations.

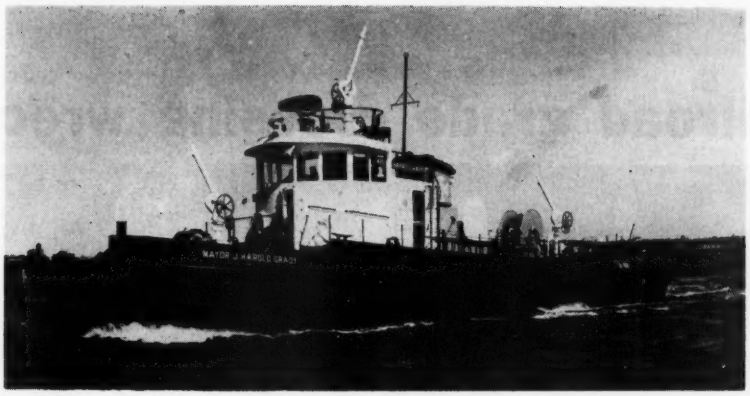
The fire was extinguished by one hose stream from a line almost 1,000 feet in length. In connection with lines that may be used at such fires, the following suggestions are offered:

1. Have some idea of the location of the fire and the way it is to be approached before hooking up to a hydrant or taking hose from the apparatus.

2. If a standpipe outlet can be used to advantage as was done at this fire, charge the system and use it.

3. A stream from 1½ inch hose may suffice to put out the fire but the amount of such hose that can be used in the stretch is limited since the higher pressure needed at the pump may result in a burst length of hose.

Continued on page 1067



Engine 39, Baltimore City Fire Department, the fireboat "Mayor J. Harold Grady" under way in Baltimore harbor. Addition of three new boats has modernized Baltimore's entire waterfront protection fleet

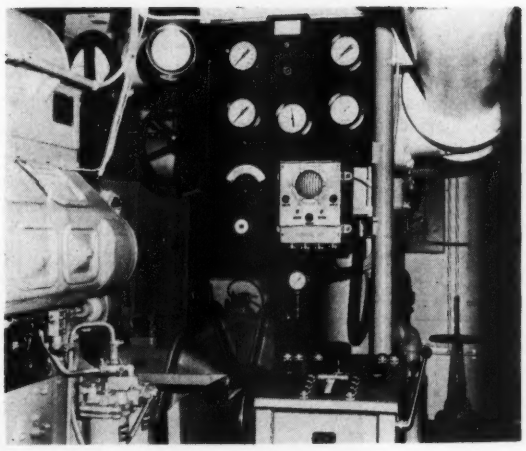
Baltimore commissions three new fireboats

FIRE PREVENTION Week was brought to a fitting close by the Baltimore City Fire Department on October 14 with the dedication of three new fireboats. Several hundred persons gathered at the municipal pier to witness the ceremony. The wives of the three persons honored by having the boats named after them broke traditional bottles of champagne over the bows of the "Mayor J. Harold Grady" (Engine 39), "P. W. Wilkinson" (Engine 16), and the "August Emrich" (Engine 48) while all harbor craft sounded their whistles and sirens to commemorate the event. At the same time the 12,500 gpm fireboat "Mayor Thomas D'Alesandro, Jr.," standing in mid-channel, threw up a wall of water in honor of the event.

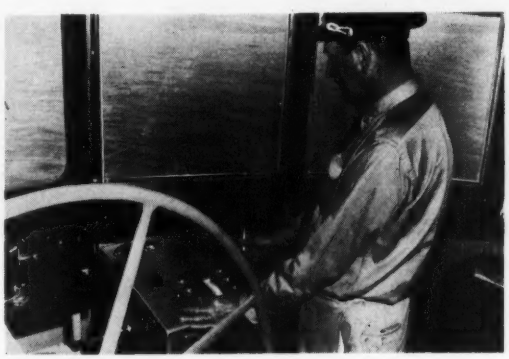
The new boats, all sister ships, were named after the present Baltimore Mayor J. Harold Grady; P. W. Wilkinson, retired executive secretary of the Baltimore City Fire Department who served in that capacity for 54 years; and retired Chief of Department August Emrich who served for 49 years from 1883 to 1932.

Designed by Naval Architect Thomas D. Bowes of Philadelphia, Pa. and built by Jakobson Shipyards, Inc., Long Island, N. Y., the steel hulls have a length of 85 feet 4½ inches, a beam of 19 feet 8 inches, and a draft of 8 feet. Each accommodates a crew of eight. Each craft employs a single 10-cylinder 880 bhp Fairbanks-Morse diesel engine for both pumping and propulsion. Each engine drives a Bird-Johnson KaMeWa controllable pitch propeller giving a rated speed of up to 15 mph and excellent maneuverability.

Two Fairbanks-Morse 8-inch fire pumps are mounted in each boat and are rated at a total of 6,000 gpm at 150 psi. The pumps require 680 engine horsepower leaving 200 horsepower for propelling and maneuvering the ships at the scene of a fire. Discharge can be directed to three 3,000 gpm McIntyre Invincible monitors, or two discharge manifolds having a total of eight 2½-inch outlets. Two after hose reels have a capacity of 2,000 feet of 2½-inch hose. A 1,000 gallon National liquid foam system built into each craft is available for flammable liquid fire fighting and can be directed to any discharge port or monitor.



Fingertip propulsion control is featured on new fireboats. Variable pitch propeller is said to permit maneuvering boat in its own length



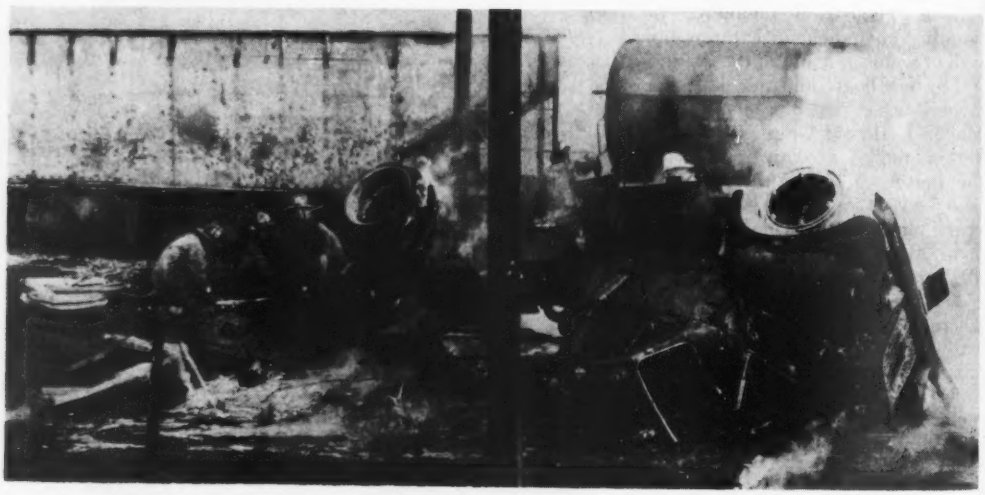
Engine room propeller console and gage panel is mounted forward of engine alongside pumps. Engineer's location is directly under pilot

The boats cost approximately $350,000 each and are equipped with two-way radio and radar. They replace the steam driven "Cataract," in service 69 years; the steam driven "Deluge," 49 years old; and the "Cascade," a diesel-driven World War I Navy subchaser converted to fireboat duty. in 1921. □□

Railroad grade crossing wreck and

Fire fighter chops hole into "skin" of lead engine for employment of fog streams. Metal exterior covering prevented foam from reaching interior fire during initial operations —Birmingham News photo

fire kill four in Birmingham . . .



Burned wreckage of tractor lies on roadside near unprotected grade crossing. Railroad tank car shown in background stopped in center of fire but did not ignite. Molten metal from truck steams in left foreground —photo by Hugh K. Jones

By JOHN L. SWINDLE
Deputy Chief

TRAIN–TRUCK collisions at grade crossings may not be frequent but when one does occur the effects are usually serious. A recent accident of this nature in Birmingham, Ala. resulted in an explosion, two separate fires and the death of four persons.

On the morning of August 8, 1960, a tank transport truck manned by one driver and carrying 6,800 gallons of tractor fuel left Tuscaloosa, Alabama, at approximately 5 a.m. for Birmingham, Alabama. At approximately 6:50 a.m. a Gulf, Mobile and Ohio freight train left downtown Birmingham, Alabama—destination, Tuscaloosa, Alabama. This train was made up of 5 diesel locomotive units, 38 assorted freight cars and a caboose. It was manned by an engineer, a fireman and

brakeman in the leading engine and a conductor and a flagman in the caboose.

At 7:14 a.m. there was a collision between this transport truck and railroad train at an unprotected grade crossing near the city limits of Birmingham. The railroad engine cut the tank of the transport truck into two parts causing an explosion and fire. This collision and explosion filled the lead railroad engine with burning oil and continued down the track about 150 yards as a huge flaming torch before overturning.

Foam unit called

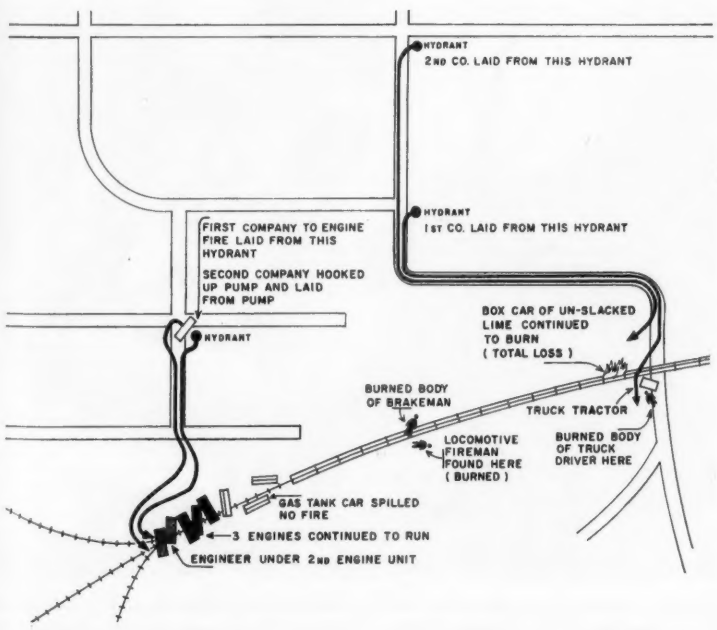
The Birmingham Fire Department received its first call and report at 7:15 a.m. Two engine companies and a district chief were dispatched and the district chief, upon arriving at the scene, called for a foam unit and a deputy chief.

The deputy chief found the fire under control when he arrived but was informed that the locomotives of the train had wrecked approximately one-third mile from the collision point and that they were now burning. The deputy chief called for two more engine companies and a district chief to report to this fire.

Upon arriving at the locomotive fire the deputy chief found the two lead engines broken up and burning. The other 3 diesel engine units were piled up in the wreck but their motors were still running. He requested by radio people familiar with the engines to report to the scene and shut these engine motors off. This was done some 30 minutes after the wreck.

An aircraft foam unit was dispatched from the Birmingham Airport to the engine site. This unit operated but could not reach or extinguish the fire inside the engines with foam. A portion of the sides of the diesel units on fire were cut away and two 2½-inch water fog streams were employed. After approximately 1½ hours the fires in the engines were extinguished. Due to the large amount of diesel oil and oxygen cutting torches used in clearing up this wreck, the pumpers working at the diesel engines were on the scene throughout the day. The last one returned to service at 6:15 p.m.

There were 4 deaths caused by this collision and fire. The transport truck driver was killed instantly. The fireman and brakeman jumped from the engines before the wreck. The brakeman was killed instantly in the jump and the fireman died on the way to the hospital. The engineer was killed in the wreck of the engines and it was approximately 9 hours before his body was recovered. A woman passenger of an automobile following the truck was also hospitalized for burns. □□


HYDRANT
2ND CO. LAID FROM THIS HYDRANT
HYDRANT
1ST CO. LAID FROM THIS HYDRANT
FIRST COMPANY TO ENGINE FIRE LAID FROM THIS HYDRANT
SECOND COMPANY HOOKED UP PUMP AND LAID FROM PUMP
HYDRANT
BOX CAR OF UN-SLACKED LIME CONTINUED TO BURN (TOTAL LOSS)
BURNED BODY OF BRAKEMAN
TRUCK TRACTOR
LOCOMOTIVE FIREMAN FOUND HERE (BURNED)
BURNED BODY OF TRUCK DRIVER HERE
GAS TANK CAR SPILLED NO FIRE
3 ENGINES CONTINUED TO RUN
ENGINEER UNDER 2ND ENGINE UNIT

Hold Firemen's Day at Wisconsin State Fair

The first Wisconsin Firemen's Day was held August 26, as part of the state fair at Milwaukee. Thousands of spectators in the grandstand witnessed a two-hour program that included the grand finals of the state firemanship tournament, and demonstrations of fire fighting by instructors of the fire service training program of the State Board of Vocational and Adult Education, while "Sparky" and "Sparky, Jr." roamed through the stand with a fire prevention message.

The program, planned and directed by William E. Clark, supervisor of fire service training, alternated demonstrations with the tournament events to provide an uninterrupted two-hour show, climaxed by the burning of a house moved to the fairgrounds for that purpose. The program began with a parade of old apparatus, some of which was later used to show the evolution of fire fighting from the bucket brigade, through hand pumpers and steam pumpers to modern apparatus and equipment.

Hartland won the tournament with Lake Mills second and Couderay third. The events were run under strict rules that require full fire clothing and standard equipment and are designed to be of a practical nature, with emphasis on accuracy. They included ladder rescue, hose and ladder maneuver, burst hose replacement, and two events in which gas masks are used.

The Milwaukee Fire Department had one of the largest booths at the fair. Thousands of persons viewed this attractive exhibit which placed strong emphasis on fire prevention and included fire prevention literature for fairgoers to take home with them.

It is hoped that fire departments from other states may be allowed to participate in next year's tournament. Those interested in tournament rules and regulations may obtain them by writing to William E. Clark, Supervisor of Fire Service Training, 14 North Carroll Street, Madison 3, Wis.

National Board Issues New Edition of Fact Book

The Insurance Information Institute in cooperation with the National Board of Fire Underwriters has prepared a new 36-page Property Insurance Fact Book. The 1960 Fact Book is a compendium of information on fires, and facts about them. It is designed for use as a ready reference by research men, speakers, scholars, and writers on fire or fire prevention subjects.

Extensively indexed, the book contains historical background about fires and the origin of property insurance, leading causes of fires, materials ignited, fire frequency 1942-1959; fire losses, fatalities and catastrophes. Single copies may be obtained by writing to the publications editor, Insurance Information Institute, 60 John Street, New York 38, N. Y.

California Pushes Thread Standardization Program

By ROI B. WOOLLEY

STANDARDIZATION of fire hose threads is making steady progress throughout the nation with the State of California setting a fast pace in conversion to NST. This statement comes from Battalion Chief Robert Ely, Master Mechanic, San Diego, Calif., Fire Department who is chairman of the special committee on fire hose standardization of the International Association of Fire Chiefs.

According to Chief Ely, the emphasis being placed on mutual aid as an outgrowth of large scale fires and the threat of enemy attack, has focussed greater attention on the importance of complete standardization of hose threads on all size hose couplings.

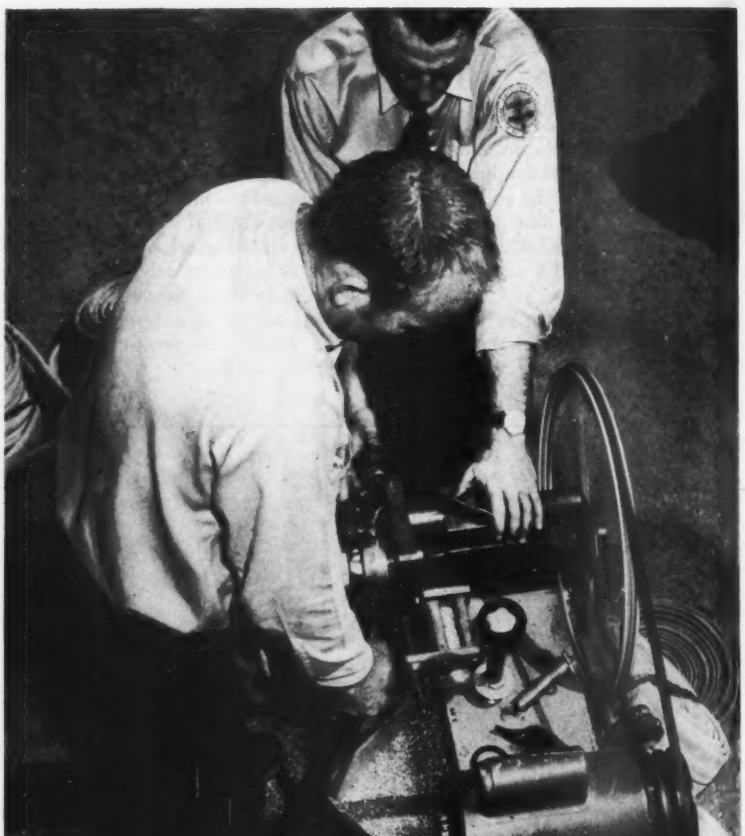
Standardization—or the lack of it—has played an important part in the record breaking struggles to control the field and forest fires in California and the northwest during 1960. These catastrophic fires have caused losses in excess of $30 million, and taxed the resources of the U. S. Forestry Service, California Division of Forestry, and the State's municipal and county fire departments to the limit.

Reports from certain areas where forces from all of these—and other sources were thrown into action, clearly list the liability incurred by lack of standardized hose couplings—particularly in the smaller size hose brackets.

The State of California adopted the standard thread for 2½-inch hose as far back as 1932. But although a large preponderence of municipal fire departments throughout the state have accepted NST for 1½-inch hose, the forestry services were slow to convert their old iron pipe and other threads to NST. Various reasons were advanced for this, such as poor quality and thin shelled couplings and nozzle tips which were difficult to recut; the lack of suitable re-threading equipment; the cost of conversion; and the need of instructing personnel in the technique of re-threading.

The conversion job was made easier by the introduction of a power thread cutting machine designed by Chief Ely and described in the November, 1958 issue of Fire Engineering. The portable device will standardize threads without removing couplings from the hose.

The San Diego County Forestry fire fighters began conversion operations in the spring of 1960. According to County Ranger Chief, James A. Fenlon, one of the Ely standardizing machines was secured from the California State Fire Marshal's Office and set up



Rangers employ Ely rethreading machine during standardization of 1½-inch forestry hose coupling at Flinn Springs Station, California Division of Forestry. Machine does job in about 90 seconds—*all photos—California Division of Forestry by F. J. Williams*

California fire officials discuss standardization of 1½-inch hose couplings. Left to right are: Chief Forest Ranger James G. Fenlon; Battalion Chief Ely; State Fire Marshal Ray Shukraft; Fire Marshal Lee M. Green, Eleventh Naval District

at the Flinn Springs Station of the Forest Service. Assistant ranger Stanley L. Moe was in charge of the operation. In the first 12 days 18,600 feet of 1½-inch hose and 1,200 nozzles, adapters, etc. were re-threaded; couplings were installed on an additional 15,100 feet of 1½-inch hose, all the work being done by forestry personnel.

Now, forestry and city fire hose in this county can be connected together whenever mutual aid is necessary in coping with boundary line fires.

Two of the earliest and most vocal exponents of standardization in California have been Fire Chief William Miller and Fire Chief and County Forester, Keith Klinger of the Los Angeles City and County Fire Departments, respectively. Although city and county forces had little difficulty in interchanging connections, it was different with U. S. and State Forestry forces, when it came to the 1½-inch hose.

State Forester James K. Mace, another stalwart for standardization, and others of the State Forestry Division, joined in emphasizing the need for complete standardization of couplings. A real start toward that end was made when the Los Angeles County Fire Department secured a male thread cutting machine from the State Fire Marshal's Office. In March 1960 Chief Klinger reported approximately 200,000 feet of 1½-inch hose completely standardized. At the same time, some 4,500 nozzles and fittings for the County's 103 fire stations were re-threaded. Since that time Chief Klinger reports the County Fire Department completely standardized.

IAFC urged to push program

In his report to the chairman of the IAFC's committee on hose thread standardization, Chief Klinger says: "May I suggest that the International Association of Fire Chiefs continue to push this most worthwhile program on a nationwide scale. Further, the individual fire service organizations should work very closely with their respective State Legislative bodies in obtaining this as an individual state law, which was the case here in California. This would result in a nationwide application of the standardization of 1½-inch hose threads." Chief Klinger adds this thought: "Costs and budgeting for projects of this nature are always problems in this area. I suggest the program be budgeted in two successive fiscal year budgets, which would ease this burden a great deal."

In July, 1960 Orange County, Calif. —which has also known the handicap of nonstandard hose threads, completed conversion of all 1½-inch fire hose couplings, nozzles, adapters and fittings within both state and county protective areas, according to C. S. Thomas, Assistant State Forest Ranger.

At the state level, the California Division of Forestry, F. H. Raymond, State Forester, began the standardization of 1½-inch hose threads late in 1959. The re-threading job is now well advanced. Because of the magnitude of the task, the operation has been conducted by Districts. Already over 128,600 feet of hose and 4,200 nozzles and fittings have been converted—this in spite of interruptions occasioned by the need of fighting serious fires.

Encouraging word has been received by the IACF's committee that the United States Forest Service is expecting to start its re-threading project to convert their 1½-inch iron pipe threads to the National Standard. As this is written Pacific Coast representatives of the Service are meeting with Chairman Ely to complete the details.

Gratifying progress in hose thread standardization has also been made by the Eleventh Naval District on the Pacific Coast. Mr. Lee Green, Fire Marshal, Eleventh Naval District reports the Navy has already started to standardize their 1½-inch threads and henceforth, all new hose of that size purchased by the Navy will have NST. Presently the Navy has standardized on all 2½-inch hose of which over 302,400 feet is now in service. Over 93,250 feet of 1½-inch hose will shortly be converted to NST.

In the report of his committee, Chief Ely says: "It is recommended that all chiefs of fire departments using nonstandard threads inform their superiors in writing of the renewed effort that is being made to get all fire hose threads standardized nationwide, and ask that a local program be started as soon as possible." □□

Can you give "Yes" answers to all these que

When you buy an M-S-A® Air or Oxygen Mask, with the new M-S-A® CLEARVUE* Facepiece and Demand Regulator, or the optional accessory, the AUDI-LARM, you can give positive "yes" answers to all these important questions about breathing equipment.

FACEPIECE

Q. Is lens easily replaceable in field without special tools?

Q. Does lens fastening device create the uniform tension that prevents loosening, pop-out, and leakage?

Q. Is the facepiece designed to prevent lens from fogging?

Q. Does the facepiece provide a means for mounting and adjusting prescription glasses inside the facepiece without affecting the seal?

Q. Is there a molded lip inside the facepiece to provide a comfortable leak-tight fit on a wide variety of faces?

Q. Does facepiece have a chin stop to eliminate improper positioning and wearing discomfort?

Q. Is exhalation valve well guarded from possible damage and yet readily replaceable?

Q. Is there a speaking diaphragm?

DEMAND REGULATOR

Q. Does admission valve have two-lever sensitivity (easily demonstrated) which provides large volumes of air with minimum breathing effort?

Q. Is filter of pressure-reducing valve efficient enough to prevent entry of extremely fine particles?

Q. Is high pressure side forged brass which offers optimum strength to withstand high pressure from cylinder?

Q. Is pre
excess
Q. Is dia
seal w
Q. Is by
fragil
Q. Is har
horizo

MINE SAF
Pitt

MSA Backs

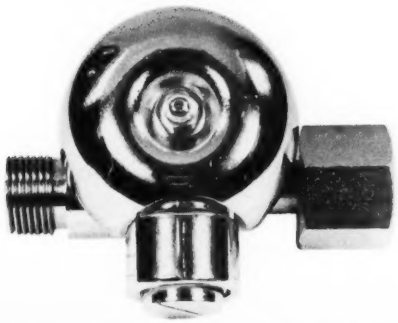
se questions about Breathing Equipment?

Q. Is pressure relief valve mounted externally so that any excessive pressure vents safely to the atmosphere?

Q. Is diaphragm in regulator designed to serve as its own seal without using cement and a piece of string?

Q. Is by-pass valve flow internal rather than through a fragile piece of tubing mounted externally?

Q. Is hand-wheel on cylinder valve in an easily accessible horizontal position?



The AUDI-LARM (audible warning device) can be put on new or old apparatus without any special assembly or removal of parts.

MINE SAFETY APPLIANCES COMPANY
Pittsburgh 8, Pennsylvania

MSA

MSA Backs Up Its Label with Selection, Quality, Research, Experience

Setauket firemen extinguish a JP-4-fed fire in a bus with low-pressure water fog

Suffolk County Chiefs Hold Annual Field Conference

Approximately 35 fire departments from eastern Long Island, N. Y., participated in the Sixth Annual Fire Chiefs' Field Conference, sponsored by the Fire Chiefs' Council of Suffolk County on September 25. The conference was held at the Fire Training Center at Yaphank. About 15 manufacturers or dealers had exhibits at the conference.

The fire fighting demonstrations ranged from air craft crash fire fighting by a crew from Suffolk Air Force Base to extinguishing a fire in baled hay by the Riverhead Fire Department.

Greenwich Fire Fighters See Rescue Techniques

Two hundred and fifty fire-police-and firemen from the Greenwich, Conn., area witnessed a demonstration of rescue techniques on Sunday, September 25th, at Eckman Center, Old Greenwich. The demonstration was given by Rescue #4, New York Fire Department.

Deputy Chief Henry P. Crawford of Greenwich Fire Dept. opened the affair with a few words on the interesting work and the background of the rescue company. The group was welcomed to Old Greenwich by President Frank Zint and Vice President Joseph Tammany of the Greenwich Association of Fire-Police Patrols.

The first demonstration consisted of lowering an injured person from a roof using a Stokes stretcher. Next came the rescue of a person from a roof and stopping by a window below the roof to pick up another person.

The third demonstration was the "Slide for Life" using an aerial ladder from the Sound Beach Fire Department. Capt. Davis and two men of his rescue company slid down from a height of 65 feet, showing the use of a pompier hook. Final demonstration was a gathering of all of the volunteers into groups to observe the proper way to tie knots for lowering a person from a roof or window.

Joe Tammany

Greenwich fire officials and demonstration team. Left to right are Chief Stuart Potter; Captain H. D. Davis, Rescue 4; Firemen E. Alexy, W. Will, J. McGoldrick, F. Cook, N. Popolizio; and Deputy Chief Henry Crawford —photo by Andrew Hagymasi

Building Program Advances in Birmingham

The Birmingham, Ala. Fire Department expects to occupy by January 1961, a $150,000 two-story training center and new Station No. 20 on city-owned Fairgrounds property. An engine, aerial truck and chief's car will be housed on the main floor. Classrooms and offices for drillmasters and instructors will be on the second floor.

Two blocks east of this station and training center but still on Fairgrounds property, a $50,000 five-story drill tower will be built. Deputy Chief John Swindle says that fires will be simulated in this structure to test equipment and firemen's skills.

Construction is expected to start next January on a new No. 8 station, to be erected on the same location as the present station.

It is proposed to rebuild Station No. 13 in North Birmingham and consolidate it with a ladder company. Chief Swindle says Station No. 5 would be moved to the new site and established as the ladder company. No. 5, an engine company at present, was scheduled originally to relocate nearby in the Acipco area.

Plans are also going forward to build a new Pratt City station, three blocks north of the present location, if land can be acquired from the Tennessee Coal & Iron Company.

The department is also trying to obtain land in Green Springs Park for a new No. 7 station. Chief Swindle's proposal is to trade the park board the land the station is on at present in the corner of Jordan Park, for the new site in Green Springs Park.

The deputy chief hopes that Station No. 6, presently housed with No. 1, can be relocated somewhere in the west of the downtown section. However, there are no definite plans as yet, and construction of this station will not start before 1962.

All of the plans for the new stations and equipment were made possible by the bond issue passed in May.—*Robert Sams*

The Miller-Meteor Volunteer Ambulance is a unique blending of exceptional headroom and capacity with the sleek, modern look.

THE

Volunteer

AMBULANCE

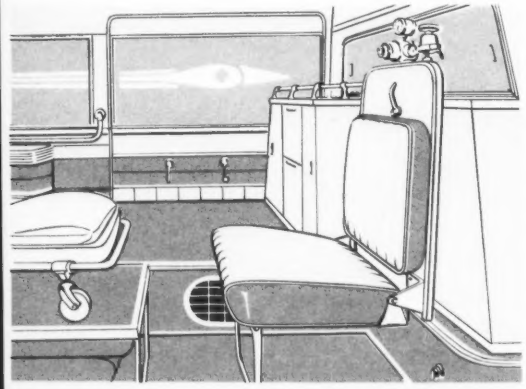
Remarkable Capacity for Rescue Operations

The Miller-Meteor Volunteer Ambulance is a unique blending of exceptional headroom and capacity with the sleek, modern look. Although the streamlined exterior is long and trim, the interior boasts a full 48" headroom, plus remarkable storage facilities and working space. Long a favorite of fire and police departments, hospitals, and others requiring extra-capacity, four-litter vehicles. The Volunteer offers the most advanced features in the ambulance field, many of them developed and pioneered by Miller-Meteor and offered exclusively on Miller-Meteor emergency vehicles. All doors on the Volunteer extend into the roof for easiest, safest loading of wheelchair patients or cardiac cases. Available with cylindrical or all-directional Safe-T-Vu warning light systems. And like all Miller-Meteors, the Volunteer is built on the renowned Cadillac commercial chassis, world-famous for sure, dependable performance, smooth operation, and low maintenance.

MILLER-METEOR DIVISION • DIVCO-WAYNE CORPORATION • PIQUA, OHIO

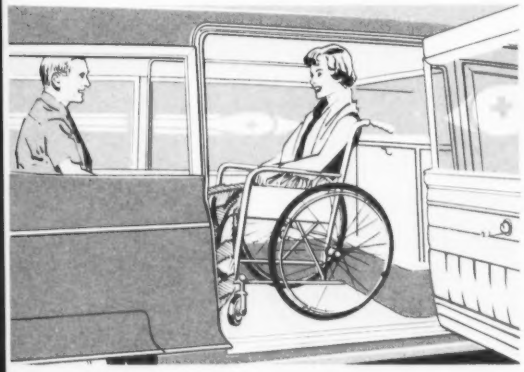
THE Volunteer AMBULANCE

Advanced ambulance features—equal to any emergency

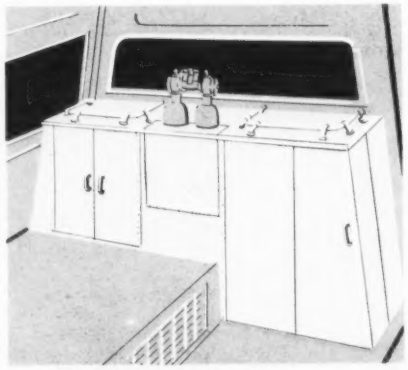


Sit-Rite Seat Arrangement, exclusive with Miller-Meteor, provides good legroom for a seated attendant, even when the second attendant's seat is folded into the stepwell to permit use of two cots on the ambulance floor. This is a standard feature.

From Miller-Meteor research regularly emerge significant "firsts" in ambulance features, making these the world's most versatile vehicles of their kind—adaptable in split-second time to the requirements of any emergency situation. Here pictured and described are some of the features available in the remarkably versatile Volunteer, the low, swift lines of which belie its high 48-inch headroom and its great interior spaciousness. The Volunteer is a favorite of fire and police departments, hospitals and others who want extra-capacity, 4-litter vehicles coupled with the impression of low overall height and sleekness of lines. Doors extend into the roof for maximum overhead clearance.



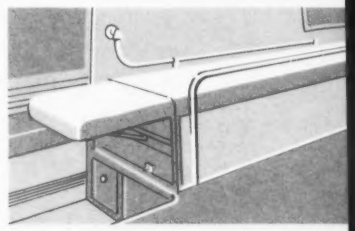
Easy loading or unloading of a patient seated in a wheelchair is provided by this ingenious arrangement. Front attendant's seat is detached quickly, without tools, to provide space on the stepwell for the wheelchair. Attendant uses facing seat.



Special dispensary cabinets are available to meet the widest range of storage requirements. Styled to blend perfectly with interiors. Stainless steel tops and Formica finishes make cleaning easy.

Wide Doorway to Efficiency and Comfort

The extremely wide rear door and the flat floor assure smooth, jar-free loading. When closed, the big door hushes traffic and wind noise because of improved weatherseals. Wide door sill for safer patient handling. Space utilized for greatest possible efficiency. Illustrative of Miller-Meteor versatility is this double-duty bunk, (right) with top which is quickly reversible for use as a fracture board. Handles at the side are retractable; the headrest is adjustable and may be lowered to become an attendant's seat.

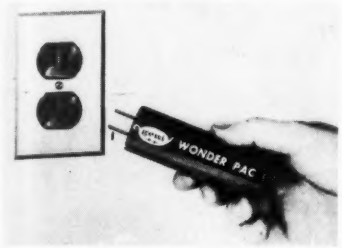


WHAT'S NEW

Among the Manufacturers

- products
- processes
- personalities

Rechargeable Battery

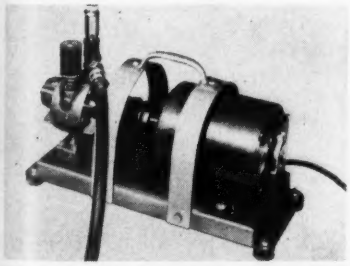


Geni Wonder Products, Inc., Chatham, N. Y., is marketing its Wonderlites and Wonder-Pacs, said to be lifetime flashlights and battery cartridges. The standard model batteries recharge directly from 110v a.c. house current. Special models are available for charging from automobile ignition systems ranging from 6 to 28v.

Edison Fire Eye Detector

The Thomas A. Edison Industries Instrument Division, Mc Graw Edison Co., West Orange, N. J. has introduced a new electronic tube, developed to detect fires and provide a nearly instantaneous alarm. Known as a "U-V Detector", it is a gas discharge device said to be sensitive only to ultraviolet radiation in flame. It is claimed it will not respond to direct sunlight, normal illumination enclosed in glass, cosmic or nuclear radiation. The golf-ball size tube can also be used in flame-out applications, to detect invisible ultraviolet light signals, as a detector of gas and smoke and the density of liquids or air.

Zephyrair Compressor



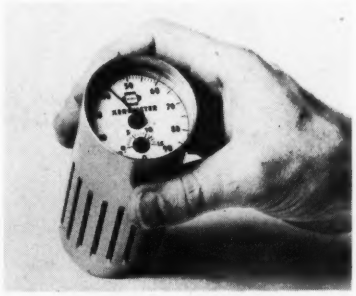
Acme Protection Equipment Co., South Haven, Mich., has announced what is claimed to be an oil-free air compressor for filling its new Zephyrair constant-flow compressed-air mask equipment. Said to weigh 40 pounds, it is powered by a ⅓ hp 110v, 60-cycle a.c. motor.

New Fulton Nylon Salvage Covers

Fulton Cotton Mills, P. O. Box 1726, Atlanta, Georgia, has introduced a new line of nylon salvage covers, as a companion to its famous Shuredry Green-Bak salvage covers. The new covers are made of 10 oz. vinyl/nylon in red, green or white.

Advantages of nylon salvage covers, according to Fulton are: it is flameproof, completely water resistant, unaffected by mildew and rot. Nylon covers are said to be easy to handle either wet or dry and require only a minimum of maintenance.

Precise Hygrometer



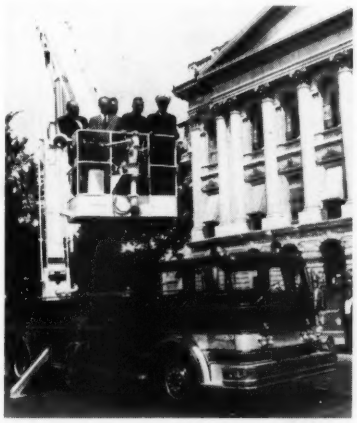
Advanced Instrument Corporation, 700 South Fourth Street, Richmond, Calif., has introduced what is said to be a sensitive and accurate moisture-measuring instrument, the Xerometer Precise Hygrometer. It is claimed to respond only to water and be capable of reading relative moisture content over the full range of "bone dry" to soaking wet. It indicates directly the relative moisture content of gases, liquids and solids, and when used in forest operations, it is claimed to be a reliable guide to fire danger due to fuel dryness.

New Fenwal Explosion Protection System

Fenwal Incorporated, Ashland, Mass., has introduced to the United States and Canada a pressure-time system of explosion protection for use in pulverized fuel plants, flammable liquid storage tanks, dust extractors and similar industrial processes. Licensed under an agreement with the Graviner Mfg. Co. Ltd. of England, the system is said to detect an explosion at the instant of inception and introduce a suppresant within a few thousandths of a second. Ultra-high speed venting devices and isolation valves also operate to prevent spreading of the explosive condition to interconnected processing units.

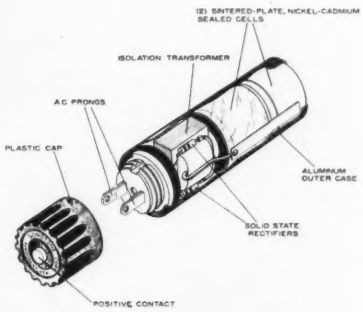
FWD Delivers Snorkel

Springfield, Illinois recently dedicated its new "Snorkel" aerial rescue unit at a ceremony outside the State Capital Building with Governor William G. Stratton participating. The 65-foot Pitman unit is mounted on an FWD F2F-7 chassis and features a five-man cab and power steering. It mounts a 250 gpm PTO pump and 300 gallons booster tank.



The rig has been named "O'Hara's Snorkel" in honor of Springfield's Public Safety Commissioner Frederic O'Hara.

Sonotone Flashlight Cell



Sonotone Corp., Elmsford, N. Y., is marketing its rechargeable flashlight battery cartridge which can be used with any standard flashlight powered by two "D"-size cells end to end. Available in two models, the batteries are said to provide from one to three hours of continuous use and may be recharged hundreds of times by merely plugging into a conventional 110v a.c. wall outlet.

Scott Voice Pak

Scott Aviation Corp., Lancaster, N. Y. announces its "Voice Pak" a transistorized speaking device designed for use with protective breathing equipment to permit communications between fire fighters under very noisy conditions.

The unit consists of a Scottoramic Mask complete with nosecup, breathing tube, regulator coupling and built-in-mi-

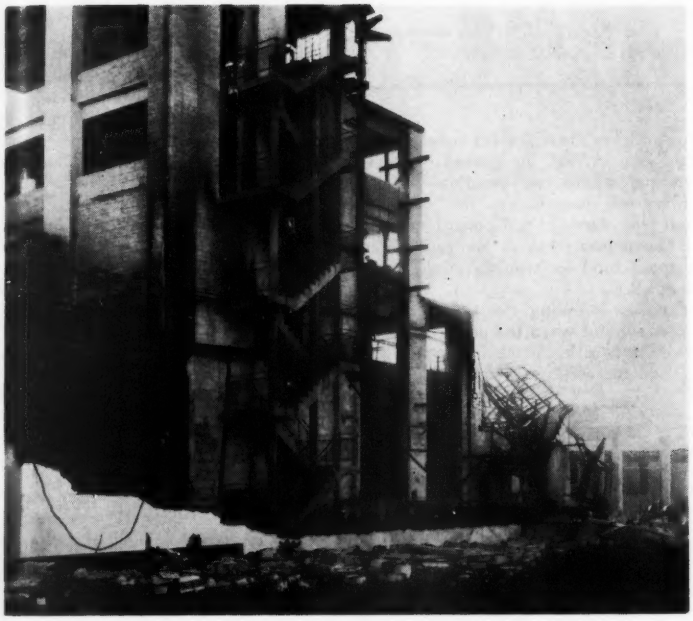
Continued on page 1076

Move in close, and stay there . . .

in heat reflecting gear

How close can you get to a fire—and hold your position? You can approach with conventional clothing, but in seconds your coat is smoking, and you must retreat. But now, protected by "Scotch• Shield" Aluminized Fabric that reflects 90% of radiant heat, you can move in closer than ever before, hold your position safely, and comfortably as long as necessary to control the fire! And it's ideal protection for top laddermen who can't retreat from flashbacks. Flexible, lightweight, "Scotch•Shield" Fabric garments that let you move freely and act quickly anywhere around the fire are used by hundreds of departments. This fabric is one of history's most important advances in protection for firemen. On the opposite page there is detailed information about this fabric.

SCOTCH·SHIELD
BRAND
ALUMINIZED FABRIC



Havoc of pyrethrum plant blast as it appeared to Nairobi fire fighters. Over two-thirds of modern structure was severely damaged

Explosion in Nairobi plant injures 19 persons

By **L. J. E. BAILLARGEON**
Chief Fire Officer

NINETEEN PERSONS were hospitalized—several with serious injuries—when an explosion severely damaged the East African Extract Corporation's plant in Nairobi, Kenya Colony, on February 19, 1960. The original alarm, from the plant's automatic fire alarm system, was received at a fire station in the industrial area at 6:26 a.m.

Physical properties

The plant consisted of a series of buildings used for storing, extracting, mixing and marketing of raw materials and by-products of the pyrethrum industry. The principal materials used in the plant were: Pyrethrum flower which is classified in the Class I range of combustible dusts, and isohexane, an industrial solvent mixture of hexane isomers. The properties of this solvent are: Flash point—below −20° F; ignition temperature—approximately 500° F; explosive limits—lower—1.2—upper 7.5; specific gravity—.6686; vapor density—2.97; boiling point—156° F. These properties vary slightly according to the composition of the raw materials used in the refining process.

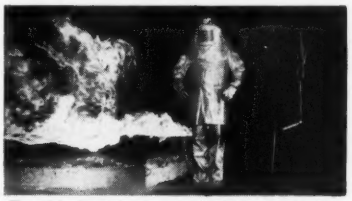
After a full investigation, in which the writer took an active part, the explosion was attributed to failure of water supply to the extraction plant. This created a critical condition in the plant circuit, and large quantities of isohexane vapor mixture were released. These vapors, being approximately three times heavier than air, spread quickly throughout the plant compound. The main source of vapor was a relief valve in the gasometer which operated at an internal pressure of .289 psi. By applying the vapor volume formula, it was found that only 217 gallons of isohexane solvent were required to fill the compound with an explosive vapor to a height of one meter (39.37 inches) above ground level. The exact source of ignition was not established, but it is believed that the three main possibilities were: Electrical, smoking or boiler installation. □□

How much—what type of Reflective clothing does a department need?

Many airport departments have equipped their entire force with "Scotch·Shield" Fabric garments. However, two suits are providing basic "starter" protection for other departments. Approach and proximity jobs can be performed with reflective hoods, bunker coats and pants, and gloves—rescue jobs with complete "entry" suits.

What is
SCOTCH·SHIELD BRAND
ALUMINIZED FABRIC

It's a fabric made of pure aluminum vapor-coated on lightweight rayon, asbestos, or glass cloth. Its bright aluminum finish reflects 90% of radiant heat. "Scotch·Shield" Fabric is extremely flexible and resists stress or tearing, won't peel or crack. Durability far exceeds other fabrics given equal heat exposure. It produces reflective-protective garments lighter than conventional bunker clothing—it eliminates the need for bulky insulation type gear. Return the coupon for literature describing "Scotch·Shield" Fabric and its uses in firefighting.



Try this heat test . . . within seconds the conventional bunker coat smoldered . . . "Scotch·Shield" Fabric garment protected for the duration of the 100 gallon spill fire!

Where can you buy
SCOTCH·SHIELD BRAND
ALUMINIZED FABRIC

Garments made from "Scotch·Shield" Fabric are available through your regular fire equipment suppliers. Or you can secure the name of fabricators by checking the box in the coupon below.

Minnesota Mining and Manufacturing Company
Dept. RBX-110, St. Paul 6, Minn.
☐ Please send me additional information on "Scotch·Shield" Aluminized Fabric.
☐ Please send names of firms manufacturing "Scotch·Shield" Fabric garments.

Name_____
Title_____
Fire Dept. or Firm_____
Address_____
City_____ Zone____ State_____

MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW
3M
ST. PAUL 6, MINNESOTA

FALSE ALARMS

Just Demonstrative

The owner of a small factory was hauled into court for assaulting the fire marshal. When asked by the judge what he had to say he replied, "I plead guilty your honor. I lost my head and struck the marshal as charged but I believe there are mitigating circumstances."

The judge frowned and said, "Well, tell me about them." "Your honor," said the man, "This morning the labor relations board notified me I would have to rehire a man I fired last month. Then the motor vehicle bureau told me to keep my truck off the roads as it failed to pass inspection. Then the Bureau of Weights and Measures told me my scales were inaccurate and refused me a seal. After this I learned the Income Tax Bureau claimed I owe back taxes and threatened to attach my accounts unless I paid up at once. Then this man walked in and asked what I would do in case of fire. So I just fired away."

Practical Joke

Some of the ladies attending the fire chief's convention were invited to be the guests of the local chief's wife at a tea. As the ladies were enjoying themselves in the living room the young daughter of the household rushed in and exclaimed, "Mommy, there is a strange man in the kitchen and he's kissing the maid."

The hostess immediately excused herself and hurried to investigate. After she had gone the young child burst out laughing and said to the guests, "I was just fooling my mother. It wasn't a strange man at all; it's just my father."

A politician noted for his lengthy orations was invited to attend a civic gathering where an excellent dinner was served. Just before the speeches began he turned and mentioned to the toastmaster that if he had eaten any more food he wouldn't be able to talk at all.

A waiter standing nearby overheard the remark and when the political leader turned back to his place he noticed another complete entree set before him.

Two probies were discussing girls.

"How is it," asked the first, "that you get along with them so well?"

"Easy," was the reply, "I use flattery. For example, the girl I was with last night got a bug in her eye. I said "I don't see how it could miss with such big eyes as yours." After that I had her eating out of my hand."

A few days later the two met again. "Say," said the first, "I don't think much of your flattery angle with women. "I tried it and it didn't work."

"No?" was the reply, "What happened?"

The first sadly explained, "The girl I was with last night got a bug in her mouth."

Get It Straight

The Deputy Chief was in the truck company quarters making life miserable for the commanding officer. Suddenly an argument broke out between two belligerent truckmen.

"You're the biggest joke of a fireman I've ever seen," shouted one of the angry men.

"Why you big jerk," retorted his antagonist, "You're the biggest dope in the department."

"Stop that this instant," ordered the mortified captain, "You men seem to forget the presence of the chief."

The financier had just finished giving a very detailed analysis of the investment business in his lecture to a group of college students so he didn't expect any questions.

However, one freshman in the rear of the hall stood up and asked, "Sir, can you tell me why it is that a woman without principle draws the most interest?"

A burglar who had been having a streak of bad luck decided to try his hand as a professional arsonist. On his very first job he was caught in the act and sent back to prison.

The prison chaplain was surprised to see him and exclaimed, "Why are you here again, Tom?"

"Because of my belief, chaplain," was the answer.

"Nonsense," said the chaplain, "What has that to do with it?"

"Oh, I believed no one was looking," was the reply.

100 Proof

A back woodsman ran up to the house of the moonshiner shouting, "Fire, fire."

The moonshiner stuck his head out of the door and asked, "What's the trouble?"

"Your still is on fire," exclaimed the woodsman, "Call the fire department."

"Don't reckon I will," calmly answered the moonshiner, "I've never watered my whiskey yet, and I'm not about to begin now."

The fireman's young son came home "bawling" with a black eye and bloodied nose.

"How did this happen?" said the father sternly.

"That Johnny down the street doesn't fight fair," sobbed the son. "I challenged him to a fight and gave him his choice of weapons."

"Well," said the father, "What did he do that was unfair?"

"He chose his big sister," was the anguished reply.

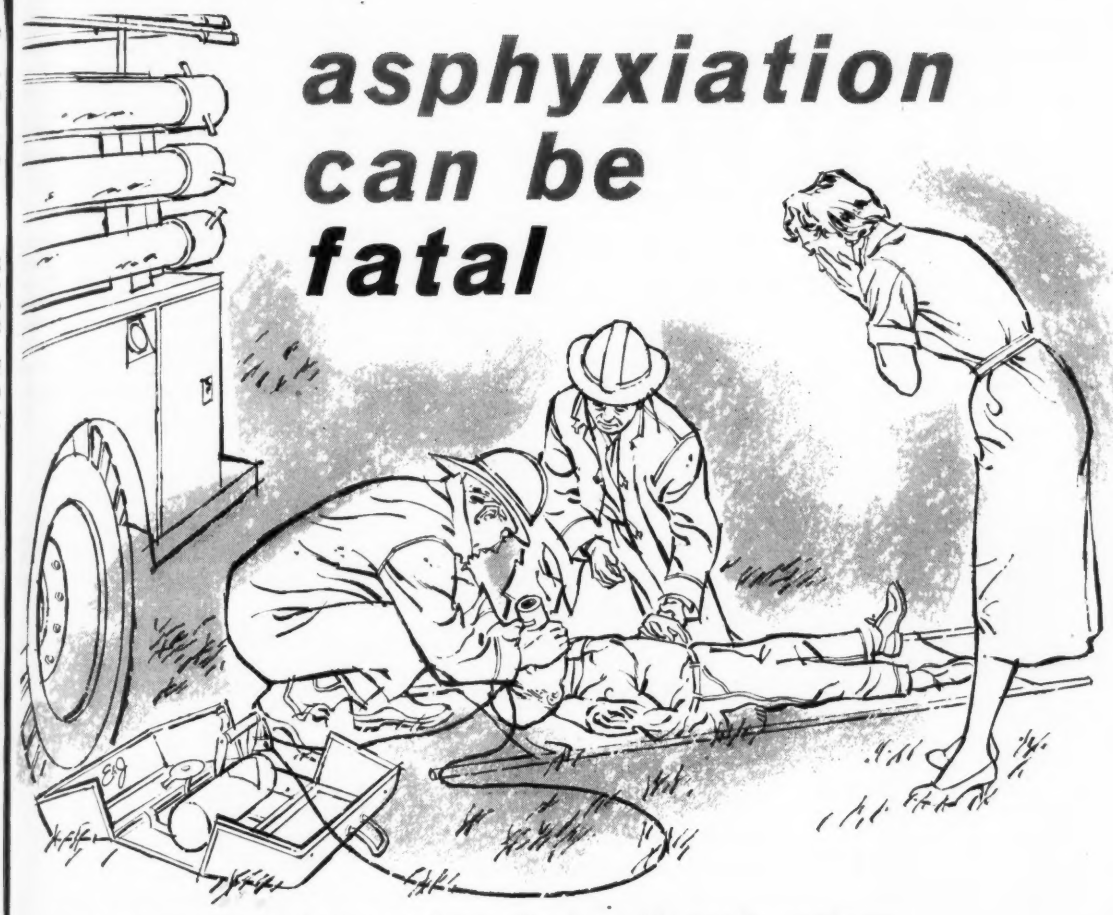
A group of visiting fire officials were being shown through the local fire college by the hard boiled drillmaster.

"How many firemen are there studying in this school?" was the first question asked.

The drillmaster's cynical reply was, "About one in ten."

"I'd say he's not quite ready yet emotionally!"

asphyxiation can be fatal



. . . unless rescue breathing is started immediately. A life may be saved even when breathing has stopped if mouth-to-mouth breathing is started to sustain life *until* the E & J® Resuscitator with life-saving oxygen arrives.

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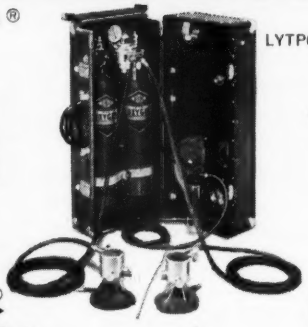

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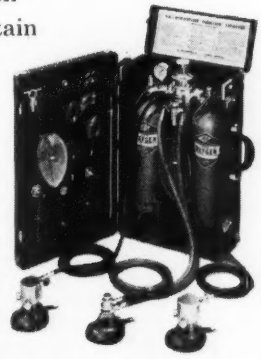

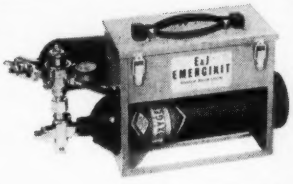

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Among the Buffs

By Paul C. Ditzel

MANY BUFF CLUBS might tear a leaf from the book of New York's Third Alarm Association which for 10 years has endowed a medal for valor plus a $100 U. S. Savings Bond.

The annual award is presented to a deserving fireman designated by the New York Fire Department's Board of Merit for an act of heroism.

Editor Bernard Grandjany of 235 West 71st Street, New York 23, N. Y., of the *TAA News Bulletin*, reports that the gold medal for valor was presented this year to Firemen First Grade Walter Fourness of Engine Company 58.

The Third Alarm Association Medal was presented by Mayor Robert F. Wagner upon the personal request of TAA President George Meade during annual ceremonies held at the FDNY Memorial on Riverside Drive and 100th Street in Manhattan. After Mayor Wagner presented the medal, Buff Meade gave Fireman Fourness the Savings Bond. Also attending were Commissioner Cavanagh and Chief of Department George David, honorary TAA member, TAAers Ira Marion, Vice President, and Past President Al Kahn also were among the dignitaries.

Fireman Fourness' act of heroism occurred during a blaze at 53-55 East 112th St., Manhattan, via Box 1361 at 12:50 p.m., April 27, 1959, in a five-story New Law Tenement, says Buff Grandjany.

The FDNY Citation reads:

"On arrival, Engine 58 found second floor apartment heavily involved in fire which was extending out into the hallway. Upon reaching the second floor, Fireman Fourness, who had stretched a line, saw a child, Ramon Dumond, age 1, standing terrified in hallway of adjoining apartment, cut off by flames leaping out door of fire apartment.

"Without any hesitation and before water was started on fire, Fireman Fourness immediately ran past the flames, and shielding the child with his coat, ran back again past flame to the safety of the stairwell. The intensity of the fire was such that the Captain and another member of Engine Company 58 were placed on sick leave for burns and smoke narcosis."

The mail this month also brought a review copy of the "History of the American Steam Fire Engine," a complete reprint of this rare and only edition which was published in 1896. Constant readers of this column will recall that advance news of this important addition to all buff's libraries was carried here several months ago.

The reprint of this William T. King classic is a masterpiece and cannot be too highly recommended, regardless of whether or not buffs are interested in the era of the steam pumper. Owen Davies, Publisher, of 1214 North LaSalle Street, Chicago 10, Ill., deserves a Rose Bowl of credit for this significant contribution to Americana.

The book is 7½ by 10 inches in size and contains more than 85 woodcut drawings, exquisitely reproduced. The cuts are sideview drawings of steam fire engines and detail drawings of parts, plus 30 photo illustrations of other steam fire engines.

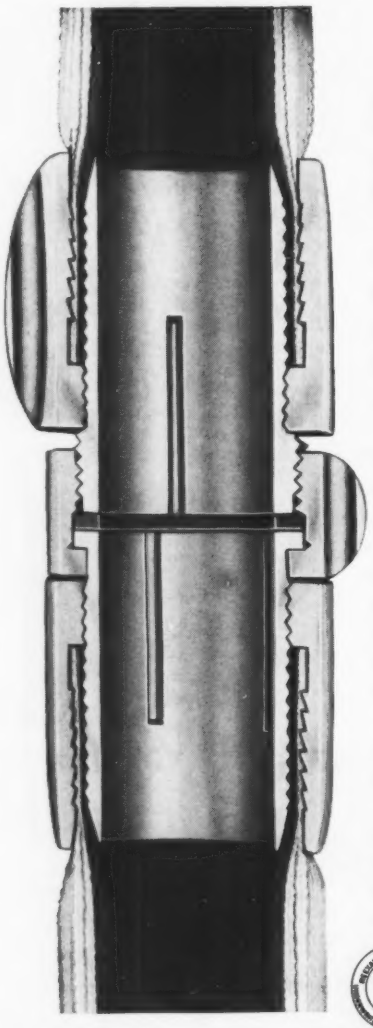
The 160-page book is chock full of dimensions, specifications, and performance records of the steam fire engines of about 48 builders. They range from the obscure fabricator of one or two pumpers to the Silsby Manufacturing Company which produced more than 1,000 rigs during their separate existence from 1856 to 1891.

Author King was a working fireman who persistently sought information on every steam fire engine built in the United States from the Paul R. Hodge engine of 1840-41 (which was sabotaged by jealous firemen), down to the greats built by Amoskeag, La France, Clapp & Jones, American Fire Engine Company and others.

Ironically, to this writer at least, Fireman King published his history in a small edition and at his own expense. The book was to become a classic, but never recognized as such by larger publishers until Owen Davies, at the urging of buffs, reprinted it.

Although Owen sent me a paperback edition at $3.50, the Deluxe Edition at $5.00 should be available by the time you read this. An excellent Christmas gift.

Also in the mails this month: A postal card with lavish postage stamps from Fire Chief George J. Bertsch of the West Point Military Academy. George was in Rome for the Olympic Games and said



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Demand Bar-Way reusable couplings on your jacketed hose and watch your efficiency go up and the cost go down.

1½" and 2½" Conventional Wing Lug in production. All other standard sizes and lug styles available. Special engineering applications on request.

UL TESTED for 1400 lbs. pressure and 2400 lbs. pull under full pressure.

BAR-WAY BAR-WAY MFG. CO., STAMFORD, CONN.

he was feted by the Rome fire chief and given his own official fire car with driver and interpreter. When in Rome . . .

President and Secretary John T. Dougherty of the Third-Alarm Club, 4003 Woodland Avenue, Philadelphia 4, Pa., says that club is busily engaged in activities to promote the PFD and to help others in the course of their firemanic pursuits.

Until the bells go down again next month, I'll look forward to hearing from you buffs and fire fan clubbers. The address remains the same: 4234 Don Diablo Drive, Los Angeles 8, Calif. □□

Myrtle Beach AFB Wins Air Force Competition

Myrtle Beach Air Force Base, Myrtle Beach, South Carolina, has been awarded top honors in the Air Force sponsored Annual Fire Protection Achievements Competition. In second place is Paine Air Force Base, Everett, Washington, with Bitburg Air Base, Germany placing third. Other installations selected for outstanding Exceptional Honorable Mention in the final judging include Minneapolis-St. Paul International Airport, Minneapolis, Minnesota; Ramey Air Force Base, Puerto Rico; and Eielson Air Force Base, Alaska.

USAF installations world-wide compete each year for a large engraved wall plaque. The competition is designed to promote and recognize results of effort expended by each base in developing and maintaining continuing excellence in all phases of a year-around fire protection program.

Fire protection performance areas considered in evaluating the quality of contest entries and the actual programs they represent include all phases of fire protection engineering applications, fire-prevention promotion, and actual fire fighting, including on-the-ground aircraft fire fighting and related rescue operations.

National Board Issues New Edition of Fire Code

The National Board of Fire Underwriters recently published the 1960 edition of the Fire Prevention Code. This is a revision of the 1956 edition of the Code, which was first published in 1930. The Fire Prevention Code is recommended for adoption as law to provide communities with the power to enforce correction of fire hazards.

The Code prescribes regulations governing conditions hazardous to life and property from fire, and provides a suggested ordinance under which a municipality may adopt a Fire Prevention Code and establish a bureau of fire prevention. Copies may be obtained by writing to the National Board of Fire Underwriters, 85 John Street, New York 38, N. Y. Those in the Middle West, write to 222 West Adams Street, Chicago 6, Ill., and if west of the Rockies to 465 California Street, San Francisco 4, Calif.

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Persons in the News

New York State Appoints Field Representatives

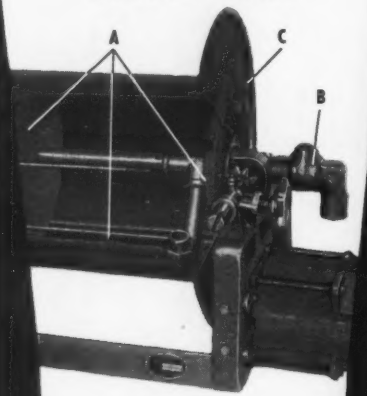
George H. Proper, Jr., acting director of the Division of Fire Safety, Office for Local Government, State of New York, has announced the following civil service appointments to the position of field representative:

Francis A. Bourassa, Latham, N. Y., assistant chief of the Verdoy Fire Department for the past seven years and a fire district commissioner. He will cover 11 counties in the Northern New York-Adirondack area.

Francis Brown, former chief of the West Carthage, N. Y., Fire Department and Jefferson County fire instructor, will cover nine counties in the Central New York-St. Lawrence River area. He formerly held a provisional appointment with the division.

Sylvester A. Delaney, a retired captain of the Albany, N. Y., Fire Department, will cover the Hudson Valley counties and Long Island. He was county fire instructor for Albany County.

What's Inside Counts Most



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C. Positive chain drive

Design and construction features make the big difference in hose reels, and these features make Hannay reels first choice among firemen everywhere: Tie-rod *plus* disc reinforcing provide maximum strength for maximum shock pressures. Weight of reel and hose carried on the frame, *not on the swing joint*, to insure leak-proof operation. Chain and sprocket maintain perfect alignment for flexible, positive drive.

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Kornfeld Heads Fire Administration Institute

Jerome M. Kornfeld, Suffern, N. Y., has been appointed director of the International Fire Administration Institute and will handle the institute's education program in the East. One such program is now functioning at Queens College, New York. Mr. Kornfeld also is director of the college's Senior Administration Program.

A volunteer fireman, Mr. Kornfeld is chairman of the law committee of the New York State Fire District Officers Association and has been counsel for fire districts in Rockland County for a number of years, as well as counsel to the Volunteer Fire Police Association of New York State.

Hickey Named Assistant Professor at Maryland

Harry E. Hickey has been appointed Assistant Professor, Fire Protection Department, University of Maryland. He is a graduate of the School of Fire Protection, Oklahoma State University, where

he received an Associate Degree in Fire Protection Technology. To this formal education he added Bachelor of Science and Master of Science Degrees from the State University of New York, Fredonia, New York.

For the past 12 years, Mr. Hickey has been a member of paid and volunteer fire department groups. He has served in

the capacities of driver, fire warden, housing inspector and director of fire prevention. Most recently he was Lieutenant, Barker Hose Company #1, Fredonia, New York, Fire Department.

In February 1958, he received an appointment to the position of Fire Instructor, New York State Bureau of Fire Mobilization and Control, now the Division of Fire Safety, and last November, was engaged as Director of Fire Administration for the Sterling Forest Corporation at Tuxedo, New York. He will continue as a fire protection consultant to this firm.

Martyn Heads Jamestown

John F. Martyn was appointed chief, Jamestown, N. Y. Fire Department on July 25 succeeding Chief Charles R. Dorman who was named to the New York State Division of Fire Safety.

A veteran of 41 years service, he was appointed to the department in 1919. He was promoted to captain and named Instructor in 1930 and became assistant chief in 1936.

Training has always been Chief Martyn's specialty and he is a regular attendee at many of the nation's leading fire schools and conferences. He has contributed many training ideas and fire fighting gadgets to the "Short Cuts" column of FIRE ENGINEERING.

Hurst Named Fire Marshal of Ontario

Deputy Fire Marshal, Martin S. Hurst, Province of Ontario, Canada, has been appointed Fire Marshal to fill the vacancy created by the death of Marshal W. J. Scott, Q.C., O.B.E. Marshal Hurst joined the Toronto Fire Department in January, 1940, and served in both operations and administration.

In 1942, during World War II, he joined the Corps of Canadian Fire Fighters and served as a staff officer in London, England and Ottawa. He returned to the Toronto Fire Department in December, 1945. In August, 1949, he joined the staff of the Ontario Fire Marshal as Administration Officer, was promoted to Assistant Deputy Fire Marshal in July, 1951, and to Deputy Fire Marshal in March, 1956.

THE MINUTE THAT WAS FOREVER FOR THE FACE AT THE WINDOW

The ladderman had a brief glimpse of a terror-stricken face at the window. Just as he reached it, the floor collapsed and the face disappeared.

But it wasn't that final minute which decided the fate of the face in the window—it was one of the seven minutes it took to pull the hose off the pumper and get water on the fire.

Bi-Lateral flips off the pumper faster because it's more flexible, and because it folds flatter. Bi-Lateral construction allows *more* hose on each pumper—enabling you to cover more fire, faster. Save time—save lives —with Bi-Lateral.

Bi-Lateral construction saves you *more* than precious minutes, because the same flat-folding feature is responsible for the protection of the lining. This means you replace it far less often—*you save precious dollars, too!* Bi-Lateral costs less per foot per year.

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Chief Supervising Engineer Of F. D. N. Y. Retires

Chief Supervising Engineer Harry M. Irwin retired October 4, after 31 years of service with the New York Fire Department. He was appointed on September 23, 1929; promoted to lieutenant in

October 1938, and advanced to captain in July 1945. He headed the supervising engineers, who responded to every major alarm and emergency in the city, supervising the placement and operation of pumpers.

The unit was recently disbanded.

In 1955, Fire Commissioner Edward F. Cavanagh, Jr., anticipating the apparatus needs of the department, sought an officer who was a fire fighting enthusiast with sound planning and operational background to head the division of fire fighting equipment and division of repairs and transportation. Chief Irwin was his choice, and was designated chief supervising engineer.

Under Chief Irwin's direction the motor fleet was modernized. There were tested and put into service 84 pumpers, 48 ladder trucks, 86 command cars and 30 miscellaneous vehicles.

One of the many proud personal achievements of Chief Irwin was the organization and supervision of a motorcade of 25 pieces of equipment, voluntarily manned by New York City firemen, to dewater Danbury, Conn., after a hurricane had inunudated portions of that city in mid-October, 1955.

Chief Irwin will be available as a consultant on fire apparatus and equipment.

Behrmann Succeeds Nelson As Chief of Indian Hill

Floyd E. Nelson, who has served as chief of the Madeira and Indian Hill, Ohio, Fire Company since 1933, retired on August 1 after almost 40 years of continuous active duty as a fireman. He became assistant chief in 1928, and five years later was named chief.

The board of trustees have announced the appointment of Clifford J. Behrmann to succeed Chief Nelson. Chief Behrmann has served as assistant chief for nearly 10 years. He became a volunteer in 1937, and five years later resigned from private employment to become a full-time fireman.

Brennan Heads Bayonne

Deputy Chief John T. Brennan was appointed chief of the Bayonne, N. J., Fire Department on October 7. The 38-year old chief, youngest in the City's history, succeeds Chief Peter C. Kenny, Sr. who retired in 1959.

Chief Brennan, a native of Bayonne was appointed to the department in 1943. He was promoted to captain in 1949 and deputy chief in May, 1953.

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Obituaries

Chief L. Waits Guthrie

Chief L. Waits Guthrie, 46, Atlanta, Ga., Fire Department died September 18 in Emory University Hospital following a brief illness. Chief Guthrie joined the Atlanta department in 1938. During World War II, he served in the Navy as a naval base fire chief. Shortly after his return from the service in 1945, he was promoted to lieutenant and in 1947 was named captain.

In 1953 while serving as acting battalion chief, he was seriously injured when a warehouse explosion buried him under tons of bricks. While bedridden in a hospital recovering from multiple fractures of the vertabrae, legs and ankles, he took the examination for battalion chief and achieved the highest rating.

He was promoted to assistant chief in 1958 and named chief on June 1, 1959. Chief Guthrie was an active member of the Southeastern and International Association of Fire Chiefs.

Fred I. Caruso, NBFU

Fred I. Caruso, 55, special agent in the arson department of the National Board of Fire Underwriters, died suddenly October 11, in Arlington, Va. A lawyer by profession, he served with distinction as a special agent in Pennsylvania and California and recently in the Washington, D. C. area.

FIRE COLLEGES

Morris County Fire School—December 6, Madison Fire Headquarters; January 3, Chatham Fire Headquarters; February 7, District #6 Fire Headquarters, Parsippany Troy-Hills; March 7, Budd Lake Fire Headquarters. For information, write Robert H. Wright, Long Hill Lane, Chatham, N. J.

South Carolina Firefighters Training Program—Dec. 5-9, Clinton; Dec. 12-16, Winnsboro; Dec. 19-23, Wade Hampton (Greenville); Jan. 2-5, Summerville; Jan. 9-13, Cayce; Jan. 16-20, Darlington; Jan. 23-27, Maulden. For information, write: H. B. Wells, Instructor, "Shady Springs," Route 1, Box 119, Prosperity.

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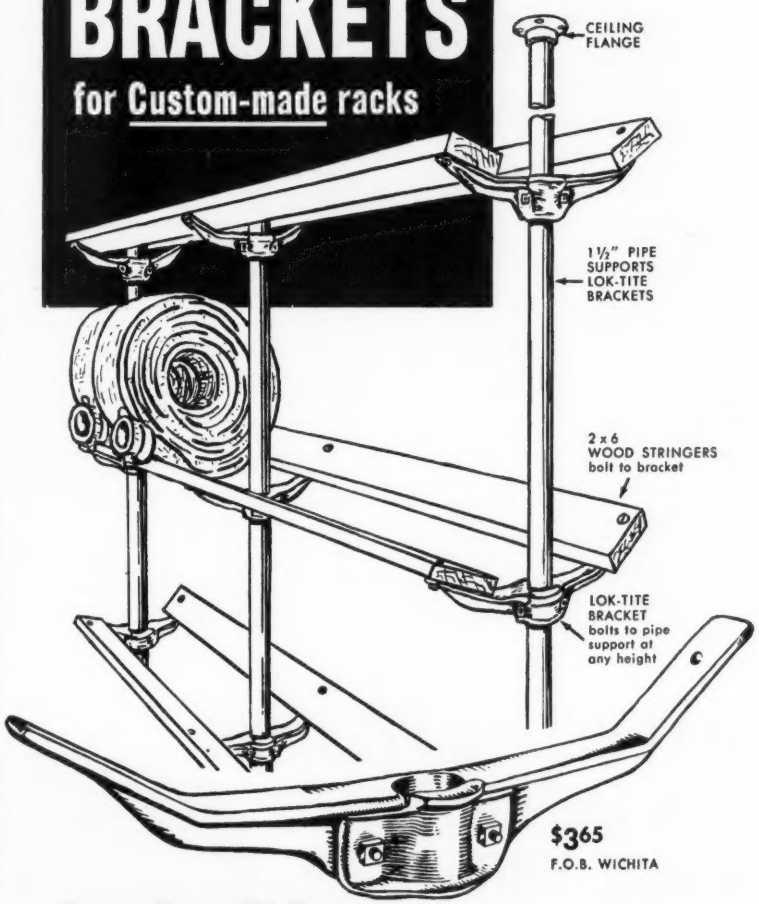
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What's Burning

THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the period from September 18th to October 17th.

Batesville, Ark.—Mount Pleasant Presbyterian Church destroyed.
Little Rock, Ark.—Building housing Capitol Cycle & Equipment Co., heavily damaged. Welding machine generator arc ignited gasoline tank fumes.
Walnut Ridge, Ark.—Pump house, warehouse and truck of Webb Oil Co. destroyed. Motor exploded.
Bakersfield, Calif.—Bankline Refinery destroyed. Explosion.
Harbin Hot Springs, Calif.—Hotel destroyed.
Oakland, Calif.—Carpet Service Co., auto repair shop and duplex dwellings, damaged.
Oakland, Calif.—Westinghouse Supply Co. warehouse damaged.
San Francisco, Calif.—Lutz Tire Co. destroyed. Electric motor.
Santa Barbara, Calif.—Mansion headquarters of Fund of the Republic damaged.
La Junta, Colo.—Gardner Motor Co. building damaged.
New Britain, Conn.—Berson Bros. oil tank storage yard badly damaged. Droppings from acetylene torch ignited oil.
Windsor, Conn.—American Sumatra Tobacco Co. shed destroyed.
Windsor Locks, Conn.—Bidwell Block, housing Connecticut Light & Power Co., Army & Navy Store, Durmin's Barber Shop, medical offices and Bidwell Farm Division, considerably damaged.
Washington, D. C.—Main Navy Building at 18th Street and Constitution Avenue, N. W., damaged.
Tallahassee, Fla.—Florida State University Psychology building damaged.
Commerce, Ga.—B. T. Minish cotton gin destroyed.
Nashville, Ga.—Warehouse housing post office equipment destroyed.
Ashland, Ill.—Historic dwelling of George Henderson destroyed.
Broughton, Ill.—Grain elevator owned by Louis Harper destroyed.
Danville, Ill.—General Refractories, Inc. fire brick plant severely damaged.
Shirley, Ill.—Main elevator of Funk Farms seed corn drying plant destroyed; storage bin damaged.
Springfield, Ill.—Salvation Army Men's Social Service Center damaged.
Fort Wayne, Ind.—Midwestern Industries Corp., fiberglass boat firm, damaged. Short circuit.
Fowler, Ind.—General Transformer Co. destroyed.
Indianapolis, Ind.—West Washington Street Methodist Church damaged. Possible arson.
Portland, Ind.—Vacant Adair Hotel damaged.
Ottumwa, Iowa—Marshall Auto Parts Co. building destroyed. Explosion.
Wichita, Kans.—Hellum Furniture Co. warehouse damaged.
Calais, Me.—Demont's Restaurant damaged.
Palermo, Me.—Dairy farmstead of John and Robert Potter destroyed.
Wilton, Me.—One-hundred-year-old Town Hall, housing Red & White food shop, meeting halls and rifle range, destroyed; adjacent Depositor's Trust Co. and G. H. Bass Co. damaged.
Baltimore, Md.—The Club Troc, Baltimore and Holliday Sts., heavily damaged.
Baltimore, Md.—Building at 36th St. and Chestnut Ave., housing Tennant's Pharmacy and Ranger's Social Club, badly damaged.
Chestnut Hill, Mass.—Apartment dwelling at 144 Middlesex Rd. damaged.
East Bridgewater, Mass.—A. R. Parker, Inc. dairy bar and restaurant damaged.
Fall River, Mass.—Maplewood Lumber Yard badly damaged.
Ipswich, Mass.—Building housing Continental Frozen Food Co. badly damaged.
Lowell, Mass.—Parker Bobbin Co. building, housing Metco Engineering and Tool Co. and Ryan Auto Radiator Co. badly damaged.
West Springfield, Mass.—H. F. Lynch Lumber Co. woodworking plant and store considerably damaged.
Bay City, Mich.—Dow Chemical Co.'s polychemical plant of Saginaw-Bay Div., damaged.
Detroit, Mich.—Two industrial buildings destroyed.
Dexter, Mich.—Ray Thornton & Co. milling plant destroyed.
Grand Rapids, Mich.—Scottie's Restaurant and apartments damaged. Grease fire.
Kalamazoo, Mich.—Roth Bros. Lumber Co. damaged. Arson suspected.
Millington, Mich.—Frutchey Bean Co. elevator and grain storage plant damaged.
Newaygo, Mich.—Powerhouse of Consumers Power Co. destroyed. Explosion.
Pontiac, Mich.—Earl Scheib Auto Painting Shop damaged. Possible arson.
Scottville, Mich.—Barn on Harrison and Claude Cregg farm destroyed. Spark ignited hay.
Minneapolis, Minn.—Super Value Market damaged.
Vicksburg, Miss.—Administration building at Army Engineers Waterway Experiment Station destroyed. Possible arson.
Havre, Mont.—Apartment and office building damaged.
Antrim, N. H.—Gates Inc., wooden case and cabinet manufacturers, destroyed.
Pelham, N. H.—Windham Rd. sawmill owned by Neal Balcolm destroyed.
Beach Haven, N. J.—Baldwin Hotel destroyed.
Jersey City, N. J.—Rodermont Industries plant considerably damaged.
Long Branch, N. J.—Three amusement stands adjoining Maher's Restaurant on boardwalk destroyed.
Newark, N. J.—Mountainside Hospital damaged.
North Bergen, N. J.—County Boscraft Corp.

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plant and warehouse destroyed; adjoining apartment dwelling damaged.

Alfred, N. Y.—Barns at New York State Agricultural & Technical Institute destroyed. Spontaneous combustion.

Dunkirk, N. Y.—Restaurant and garage on RD 1 damaged.

Fonda, N. Y.—Two barns on Willard Swartz farm destroyed.

New Milford, N. Y.—Fruit storage and packing building of Gilbert H. Ryerson damaged.

Chadbourn, N. C.—E. L. Rabon Transfer Co. supply building destroyed.

Conetoe, N. C.—George Thomas Peanut Drying Plant destroyed.

Dunn, N. C.—Garage, storage shed, grocery store, meat market, dry goods store, barber shop, furniture store, apartments and truck, destroyed. Arson suspected.

Greensboro, N. C.—American Paper Products Co. destroyed.

Hertford, N. C.—A. B. Winslow sawmill destroyed.

High Point, N. C.—Big Bear Super Market extensively damaged.

Lenoir, N. C.—Kincaid Furniture Co. warehouse extensively damaged.

Lenoir, N. C.—Old North Mfg. Co. extensively damaged.

Princeton, N. C.—Princeton School damaged. Arson suspected.

Raeford, N. C.—Priebe Poultry Co. destroyed.

Spiritwood, N. D.—Sundeen Grain Co. elevator and two office buildings destroyed.

Akron, Ohio—Dance hall, beach house and restaurant at Sandy Beach Amusement Park, destroyed.

Bedford, Ohio—Taylor Chair Co. factory partly destroyed.

Dalton, Ohio—Dalton Equity Inc., farmers' cooperative grain and feed mill, damaged.

Findlay, Ohio—E. Brooke Matlack, Inc. garage badly damaged. Welding torch on truck tank caused explosion.

Flushing, Ohio—Two business buildings destroyed; another damaged.

Lima, Ohio—National Can Retinning Co. damaged.

Cyril, Okla.—Anderson-Prichard Refinery extensively damaged.

Bend, Ore.—Lumber Products Co. destroyed.

Lebanon, Ore.—Nu-Drive-In Theatre destroyed.

Shelton, Ore.—Simpson Timber Co. damaged.

Sheridan, Ore.—Maple Co. sawmill of Roy Hurl destroyed.

The Dalles, Ore.—Petroleum barge at Pacific Island Navigation dock destroyed. Explosion.

Bethel, Pa.—Mom's Diner, four miles east on Route 22, destroyed.

Hanover, Pa.—Barn on John Shank farm destroyed.

Kingston, Pa.—Bushell Department Store damaged. Possible arson.

Kutztown, Pa.—Barn on dairy farm of Lee W. Dietrich destroyed.

Lancaster, Pa.—C. W. Kulp sporting goods center destroyed. Defective wiring.

Mahonoy City, Pa.—Rainbow Cafe, seven business firms and two dwellings, destroyed. Furnace explosion.

New Cumberland, Pa.—Dwelling and four house trailers in trailer court destroyed. Explosions.

Philadelphia, Pa.—Miracle Metal Mfg. Co. painting and spraying shop destroyed.

Towanda, Pa.—Irving L. Waldron Lumber Co. destroyed.

Wellsboro, Pa.—Peet Farms Service & Mill destroyed.

East Providence, R. I.—Seven long barns at Narragansett Race Track stable area severely damaged.

Pawtucket, R. I.—Industrial building housing Fairfax Mills, Inc. and Slater Dye Works, Inc. damaged.

Providence, R. I.—Old Friendship Street Methodist Church considerably damaged. Suspicious origin.

Kingsport, Tenn.—Tennessee Eastman Chemical Corp. plant severely damaged. Explosion.

Nashville, Tenn.—Donelson School building damaged. Arson.

Houston, Tex.—Three hangers at Houston International Airport, operated by Trans-Texas Airways, destroyed. Gasoline loading station explosion.

Midlothian, Tex.—Womack Mfg. Co. work pants plant destroyed.

Petersburg, Va.—Dwelling of Dr. Theodore G. Denton destroyed. Mysterious explosion.

Richmond, Va.—Storage building, housing Au-

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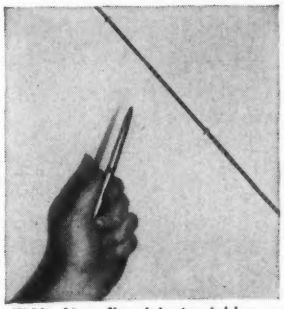

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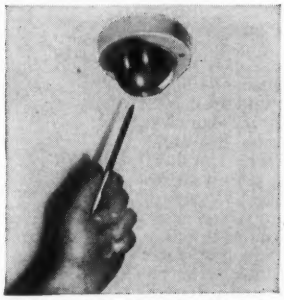

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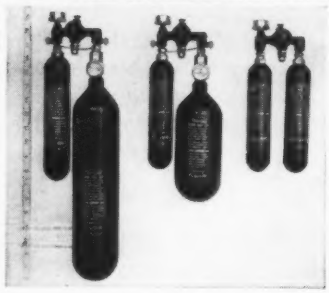

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dio Corp., Kayhoe Construction Corp., and Northside Electric Co., destroyed.

Centralia, Wash.—Centralia Hardwood Co. mill destroyed. Explosion.

Everett, Wash.—Elks Club building destroyed. Faulty kitchen utilities.

Walla Walla, Wash.—Whitehouse-Crawford Lumber Co., Tum-A-Lum Lumber Co. and adjacent building, destroyed. Exploding paint supplies.

Chelyan, W. Va.—Dutch Oven Bakeries warehouse and three trucks damaged.

Williamson, W. Va.—Mountaineer Hotel, town's largest, damaged. Overheated deep fryer ignited grease.

Dane, Wis.—Barn owned by Carl Kurt destroyed.

Fox Point, Wis.—Suburban lake shore home of Edward Kaiser extensively damaged. Bottom of kettle melted in kitchen; flames spread.

Markesan, Wis.—The Robin Mfg. Co. plastics firm damaged.

Milwaukee, Wis.—Apartment building damaged. Gas stove explosion.

Milwaukee, Wis.—An old roundhouse, leased to Black Products Inc., and the Pres-Weld Corp., gutted by fire.

Milwaukee, Wis.—Sieber & Raisch Pattern Works firm damaged.

South Milwaukee, Wis.—Chappie's Bakery, Benkowski Builders, Vince's Linoleum Shop and five apartments above, heavily damaged. Arson.

West Milwaukee, Wis.—Pressed Steel Tank Co. damaged. Blaze started in electrical unit.

Nanaimo, B. C.—At least 20 buildings in Chinese Quarter on southwestern outskirts destroyed.

Latchford, Ont.—Newly-built hotel destroyed.

Port Colborne, Ont.—Maple Leaf Milling Co., Ltd., flour mill damaged. Explosions.

Montreal, Que.—Jewish Talmudical College heavily damaged. □□

August Fire Losses

Estimated fire losses in the United States during August amounted to $90,037,000, the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this $90,037,000 loss represents an increase of 20.6 per cent over losses of $74,660,000 reported for August 1959, and an increase of 8.5 per cent over losses of $82,998,000 for last July.

Losses for the first eight months of 1960 now total $747,006,000, an increase of 4.1 per cent over the first eight months of 1959, when they amounted to $717,860,000.

These estimated losses include an allowance for uninsured and unreported losses.

Judge Rules Against Self-Service Stations

The Wyoming state fire marshal has authority to close coin-operated self-service gasoline pumps at service stations, District Judge Allen A. Pearson of Cheyenne said on July 2. The ruling was announced on a suit brought by Lee Roy Brinegar of Rock Springs.

Pearson said Fire Marshal Burton Clark was acting within the police powers of the state and denied Brinegar's request for an injunction to stop the state from closing his station. Clark cited rules of the National Board of Fire Underwriters which he said specifically brand unattended gasoline stations as dangerous.

E. W. Fair

NEW HAVEN FIRE

Continued from page 1039

treated at the scene by Doctor Gettings, a fire surgeon, and ten were admitted to the hospital for overnight treatment for minor cuts and other injuries as well as heat exhaustion.

Members of the Training Division assisted wherever possible and kept check on the pumping operations throughout the fire, with the repair shop personnel. Members of the maintenance division assisted in the operation of hose lines and later on the removal of water from the church and returning hose to the various stations.

An interesting aspect of the fire was the manning of reserve apparatus by off duty personnel as well as the response of another third of the off duty personnel to the fire ground. Within an hour's time, off duty personnel had manned apparatus to put five companies in service, along with the remaining six first line companies that had not responded on the multiple alarms.

At one point Engine Co. #9 was special called to a minor truck fire in the vicinity of the greater alarm and they then reported to the chief who had them maintain a check for spot fires in the adjacent loft buildings.

The Salvation Army and the Red Cross had canteens in operation almost immediately after the fourth alarm and worked throughout the remainder of the afternoon, serving hot and cold drinks and food to the fire fighters. □□

SUBWAY FIRES

Continued from page 1041

4. Use rolled hose lengths where advantageous. They may make the stretch easier in the area of the fire.

5. Give proper consideration to the manpower required for such a stretch. Transmit the appropriate alarms or special calls.

6. Officers supervising this work should see that lighting equipment is provided, and proper clothing and masks worn.

7. If it is possible to advance and operate from the side from which a prevailing draft may be coming, do so.

8. It is assumed that the power has been shut off in the operating area.

There is a life hazard for fire personnel working at these fires just as there is at other fires. If the hazard for civilians is great, the hazard for fire

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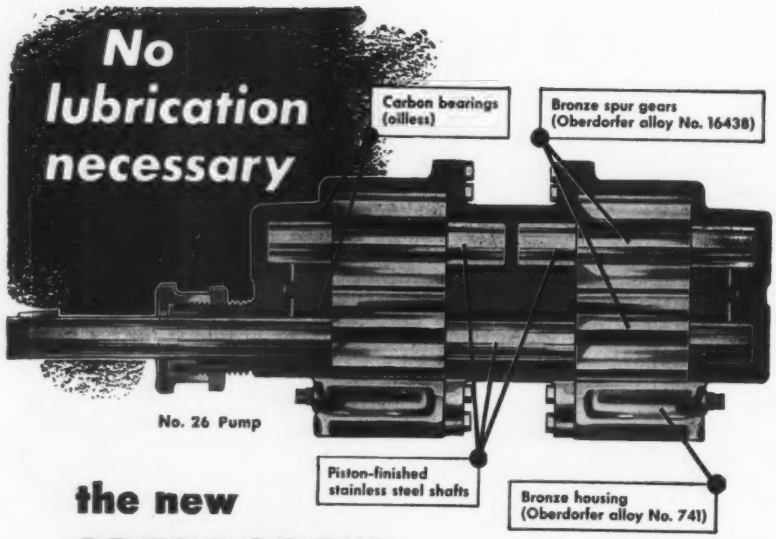
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personnel likewise becomes great since unusual risks may have to be taken, possibly before third rails are de-energized. Such rescue work may be made more difficult because of the heat, smoke, poor visibility, and perhaps, panic. Where there is no civilian life hazard, lines should not be stretched into 'live' sections until it has been definitely established that the current is off.

It is felt that a discussion of subway fires would be incomplete if the role of pre-fire planning was not stressed adequately. In this connection, the following recommendations are offered:

1. Regular or special conferences between transit authorities and proper level fire personnel are necessary in order that a better understanding of such topics as the following be gained:

   a. the importance of training subway personnel to report fires promptly and then to await the arrival of the fire department and supply any pertinent, available information.

   b. develop a clear understanding of what the fire department has in mind when requesting a shut down of power, and of how the transit authorities are expected to react to such requests.

   c. develop a fool-proof procedure for checking and reporting on power shut-offs.

   d. develop a realistic attitude toward fire department responsibility when the transit personnel request permission to restore power and resume service. Commanding fire officers, responsible for any fire-related developments subsequent to resumption of service, should not be swayed by the reluctance of railroad people to have schedules interrupted.

   e. There should be a definite agreement between both transit and fire personnel as to how, when, and where vent fans should operate. In some cases, it may be better to shut down such fans.

   f. the remedying of unfavorable conditions found by fire personnel during inspectional check-ups and/or drills.

In recent years, a new hazard has been introduced into many sections of the New York subway system. Motivated by a laudable desire to increase revenues, the Transit Authority has

leased space in subway corridors to various business occupancies. (The New York Journal-American of September 2, 1960 reports 114 concessions in the subway system). This has had several results which tend to lessen passenger safety.

At the Union Square station, for example, where the IRT and BMT lines converge, stores and stalls have encroached on an already skimpy passageway. Any interruption of service or other emergency results in the passageways becoming crowded beyond the point of safety.

Then, too, the stores and stalls sell a variety of merchandise, some of which could cause, or add fuel to, a fire. In the Union Square station, one can buy articles ranging from broiled chickens to wearing apparel.

Finally, some passengers evidently feel that upon entering one of these stores, they are no longer under the jurisdiction of the Transit Authority and its rules, and they smoke freely.

2. Fire departments in cities with subway fire possibilities may benefit from the following:

a. Develop an emergency exit card record system. The intent of this record is to provide all first alarm units with cards to be carried on the apparatus, one card for each emergency exit. These will have all vital information for ready reference when needed. The cards can be used during drills and inspections to familiarize fire personnel with the use of the exits.

b. Devote some drill periods to emergency exits. This is valuable for training and also for detecting and eventually remedying unfavorable conditions in the form of debris, defective opening devices, etc. Members can be taught how entry into the subway may be effected by removing grating and using ladders, what grates are hinged, etc. It is felt that sufficient benefit can be obtained from these drills without having to enter the track area to any great degree. If this area is entered for any reason, proper precautions should be taken. At these drills, various alternate procedures for possible use at fires, can be discussed, developed, and experimented with.

3. The commanding officers operating at fires in the vicinity of inlets of subway or tunnel ventilating systems should be aware of the danger of smoke from the fire entering the ventilating system. If there is such a possibility, the officer should contact the

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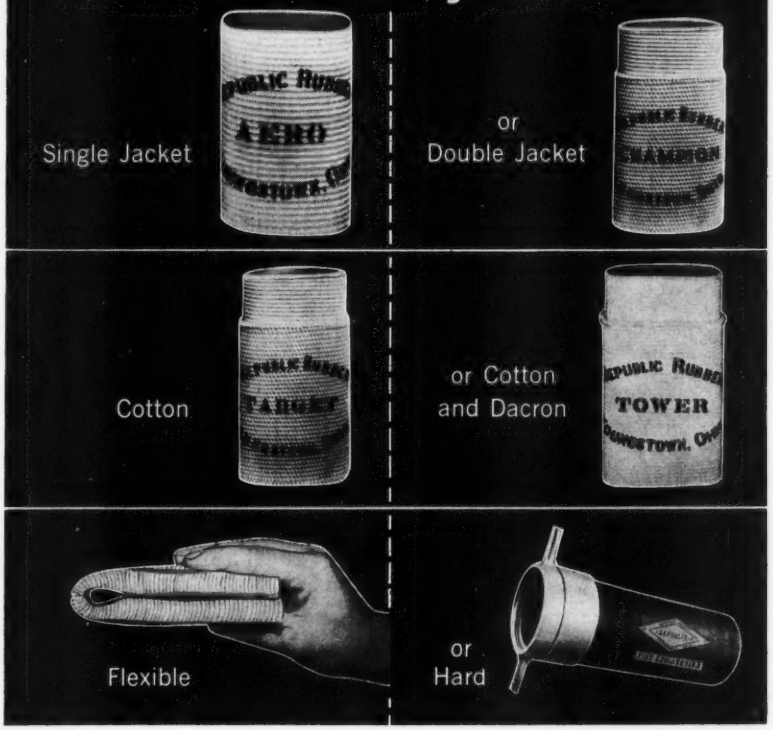

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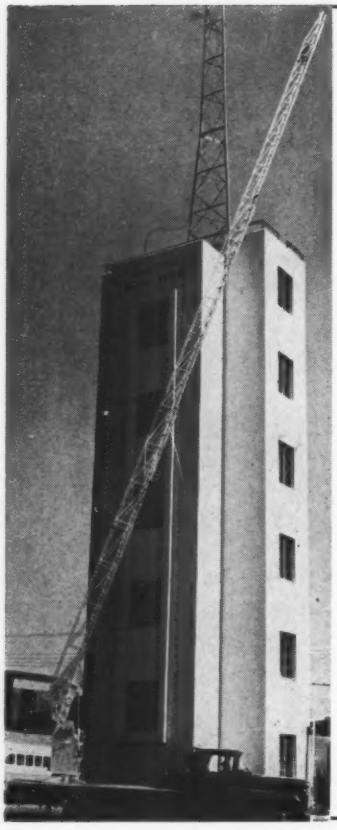

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transit authorities and have the inlet fans shut down.

4. It is strongly suggested that some means of communication be devised so that motormen running subway trains can be contacted and informed about dangerous situations that have developed—or, that these motormen can promptly contact the transit authorities to report a fire or an accident. The expense entailed should not be a deterrent in view of the possible terrific loss of life that can result at subway fires. It is believed that the London subway trains are so equipped.

No article would be complete without mention of the strenuous efforts to educate the New York City traveling public in the "Fire Safe Subway" campaign. This campaign was initiated on July 11, 1960 by Fire Commissioner Edward F. Cavanagh, Jr. Cooperating with the Fire Commissioner is his opposite number in the New York City Transit Authority, Commissioner Charles L. Patterson. It is hoped that this campaign will bring home to the citizens the extreme danger that carelessness spawns, and that combined efforts will materially reduce transit fires. □□

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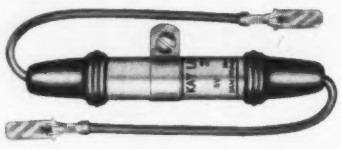

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Bird Heads British Columbia Branch, I.F.E.

The third annual meeting of the British Columbia branch, Institution of Fire Engineers was held in Vancouver on August 21, 1960. Chief H. S. Bird was elected president for the ensuing year and Chief A. A. Creed of Kitimat, secretary-treasurer.

Past president, Fire Chief F. S. Little of Vernon, B. C., installing Fire Chief H. S. Bird of Vancouver as president

The B. C. Branch formed in 1958 is the first branch I. F. E. in Canada and it is expected that other branches will be formed in the provinces. The Institution of Fire Engineers was founded in 1918 by a group of Great Britain's leading fire officers. Their intention was to give to the profession

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a status similar to that which had been enjoyed for many years by other great professions. The purpose of this institution was to promote, encourage and improve the science and practice of fire engineering, fire prevention and fire extinction.

Today the Institution has over 3,000 members in branches throughout the world. In many countries the Institution is a recognized standard of qualification for officer appointment in many fire departments. Many employers throughout the world when advertising for fire officers specify that applicants should hold a diploma of the I. F. E.

Besides some honorary members, there are six grades: Members (M.I. Fire E.); associate members (A.M.I. Fire E.); graduates (Grad. I. Fire E.); students, licentiates and subscribers. Licentiates are admitted without examination and are usually people connected with the fire service but not in it. The subscribers are usually bodies, such as local authorities and government departments. The Students are members of the service who are studying to take examinations.

Examinations for graduate and associate members are held each year on the same day in February. The examinations are open to anyone who has been employed in fire prevention, fire protection or fire extinction for a period of at least three years. The examination papers are set and marked by senior members of the Institution. The examinations are supervised by a university professor and run to university standards. The successful examinees are awarded a diploma. Candidates from the lower mainland in this province are examined at the University of British Columbia.

New Mexico Adopts Flammable Liquids Code

New Mexico has adopted a flammable liquids code which sets standards for safe transportation, storage, handling and use of flammable liquids, it was reported June 1. The code is based on model standards of the National Fire Protection Association and is similar to other regulations now in use in other states.

The state fire board, composed of State Corporation Commissioners Ingram B. Pickett, John Block, Jr., and G. Y. Fails, was authorized by the 1959 Legislature to adopt such a code. Cooperating in the development of the regulation was an advisory group composed of representatives of the New Mexico petroleum industries, fire department officials and the state fire marshal, Ralph Apodaca. Enforcement of the new code rests with Apodaca, in cooperation with municipal and county fire department officers.

E. W. Fair

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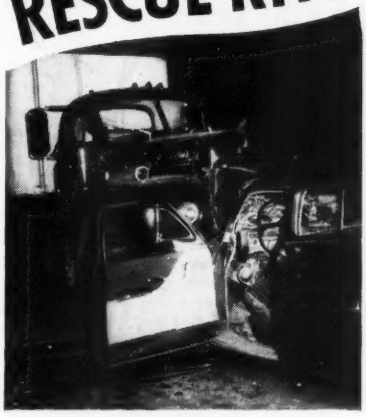

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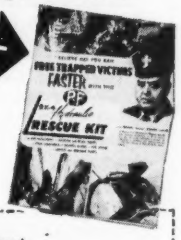

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the round table

discussion of current fire department and fire management problems

School Fire Prevention Practices

THIS IS THE THIRD installment of the Round Table on fire prevention practices in the schools.

Readers are invited to participate in this discussion which will be continued in the December issue. Address replies to Round Table Editor, FIRE ENGINEERING, 466 Lexington Avenue, New York 17, N. Y.

The Discussion

Merle Brown, Fire Marshal, Louisville, Ky.: Our schools (parochial, private and public) are regularly inspected, both by fire prevention bureau inspectors and members of the fire fighting force in our three city districts. Violations found by fire company personnel are referred to the fire prevention bureau for corrective measures to be taken. Violations found by fire prevention inspectors are referred to school authorities for corrective measures to be taken. We do have legal authority to inspect these schools and it is mandatory that violations listed by this office be corrected.

We strongly recommend that all new school buildings be equipped with automatic sprinkler protection. We require, in new buildings, that all "hot spots" be equipped with automatic fire detection equipment if the building is not to be sprinklered.

In existing school buildings, we have required that all stairways and other vertical shafts be enclosed in an approved manner using fire-resistive or non-combustible construction. We have an ordinance which exempts the enclosure of stairways in existing school buildings only if the building is equipped with automatic sprinkler protection throughout.

We do not require that school fire alarm systems, or any other type systems, be connected directly to our fire alarm office.

We do permit smoking in designated areas. We find that the practice of designating certain areas in all types of buildings, where smoking is permitted, goes far in helping to eliminate the practice of smoking in hazardous areas.

We do have a program for the instruction of teachers and custodial help in our school systems. Not only is this information disseminated through the schools by way of the bureau and the Louisville fire prevention council, which cooperate in conducting a year-round fire prevention program, but also through special programs in which the following subjects are covered: What to do in case of fire; the use and proper maintenance of first aid fire appliances; the handling and storage of flammable liquids; the importance of maintaining good housekeeping, especially in service and storage areas; the importance of keeping stair enclosure doors and other fire doors closed; the proper disposal and storage of combustible waste material.

These special programs attracted the attention of the County Public School Board which invited us to instruct their custodial help in the same manner. This particular program was done by the use of closed-circuit television, a new experience for this department, and one which we feel proved to be quite successful.

Edwin A. Hentzell, Fire Marshal, Oakland, Calif.: Monthly inspections are made by the members of the fire prevention bureau and the fire company, in conjunction with our commercial inspection program. Authority to inspect these schools and order violations corrected is accorded to us through the Health and Safety Code of the State of California and Title 19 of the California Administrative Code.

At the present time, automatic sprinklers and/or automatic fire-detecting de-

THIS MONTH'S QUESTIONS

Do you regularly schedule public and private school fire prevention inspections? If so, do you have legal authority to inspect these schools and order violations corrected or are the inspections made on an "invitation and cooperation" basis?

Do you require automatic sprinklers or automatic fire detectors in school buildings?

Do you require that school fire alarm systems be connected directly to fire alarm headquarters?

Do you permit smoking in teachers' lounge rooms and similar restrooms?

Do you have a program for instructing teachers and school janitorial help in the rudiments of fire prevention? If so, briefly outline the subject matter.

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- Fire Streams
- Automatic Sprinklers
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vices are not required in school buildings purely because of the occupancy. However, there is a requirement for a manual alarm system.

At the present time, there is no requirement for fire alarm systems to be connected directly to fire alarm headquarters.

We do permit smoking in teacher's lounge rooms only.

There has been no sustained program for instructing the teachers and janitorial help in fire prevention. However, various talks have been given by members of the fire prevention bureau to the janitors.

Since the Chicago school fire, an intensive survey has been made of the schools in this city, and with the cooperation of the board of education, sprinklers are being installed in all wood frame buildings exceeding one story in height. In buildings of ordinary construction or better, stairs are being enclosed or sprinkler systems installed.

A. Rosenfield, Fire Marshal, Birmingham, Ala.: We regularly schedule public and private school fire prevention inspections and have legal authority to do so.

We do not require automatic sprinklers or automatic fire detectors in school buildings but I certainly recommend it.

We do not require that school fire alarm systems be connected directly to fire alarm headquarters. However, it is available in Birmingham. This, too, is recommended.

We permit smoking in teachers' lounge rooms. Not only do we not wish to inconvenience anyone unnecessarily, but there is more safety in controlled smoking than smoking done surreptitiously.

The fire inspector talks personally to both teachers and janitorial help. The fire marshal arranges programs, through the board of education, that require principals to follow schedules for each school.

Joe A. Burnett, Chief, Texarkana, Tex.: We inspect the schools regularly, and school officials comply with our recommendations.

We do not require automatic sprinklers or automatic fire detectors in school buildings nor do we require that school fire alarm systems be connected directly to fire alarm headquarters.

Smoking is permitted in teachers' lounge rooms only.

Teachers are instructed in the procedure of evacuating the building, closing doors and windows, etc., and use of fire extinguishers. Janitorial personnel are instructed to practice good housekeeping and to be on the alert for fires during the time that school is in session; this is stressed emphatically.

W. K. Blaisdell, Chief, Honolulu, Hawaii: Public and private school fire prevention inspections are regularly scheduled by our department. We have legal authority to inspect all schools and order violations corrected.

Our department does not require automatic sprinklers or automatic fire detectors in school buildings.

We do not require that school fire alarm systems be connected directly to

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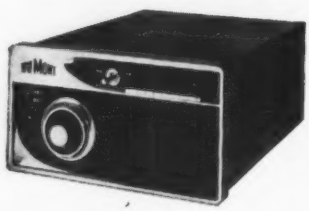

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fire alarm headquarters. However, this is being done as a policy by the City and County of Honolulu.

We permit smoking in teachers' lounge and similar rest rooms.

Two inspectors of our fire prevention bureau carry on a year-round program of inspections, demonstrations and education on the rudiments of fire prevention to the entire staff of all schools, including custodians.

M. C. Bond, Chief, Inspection Bureau, Hutchinson, Kans.: In our department, there is one regular fire inspection during the school term and spot checks are pulled periodically. We have the legal authority to inspect these schools (NBFU Fire Prevention Code) and violations are corrected. We have excellent cooperation from the school authorities.

Automatic sprinklers or automatic fire detectors in school buildings are recommended but not required.

We do not require that school fire alarm systems be connected directly to fire alarm headquarters.

Smoking in teachers' lounges is permitted; we feel a designated smoking area helps the control of this problem.

Teachers are instructed in fire prevention to this extent: A teacher's manual entitled "Fire Safety" is distributed by the State Fire Marshal's office and its use is encouraged and recommended by this department in the individual school classes. Teachers are periodically instructed on what to do in case of fire or disaster, such as the use of fire extinguishers, evacuation procedure, turning in proper alarms, etc. Our inspection bureau exhibits and demonstrates at district teachers conventions. We supervise one fire drill and one disaster drill in each school during the school term and put on one fire prevention program at each school during the year. Lack of manpower does, however, limit our appearances. Janitors are required to accompany the fire inspector on inspection tours at each school. The personnel supervisor of the custodial department insists on complete cooperation with the fire department on inspection reports where they are concerned.

A memorandum has been sent to the school principals, giving a number of suggestions for conducting fire drills.

George F. Lowe, Chief, Pueblo, Colo.: Before school opens in the fall and at least once during the school year, inspections are carried out. We not only have legal authority to inspect, we are expressly charged with the responsibility of inspecting all schools by our Fire Prevention Code.

We require automatic sprinklers only in specified areas such as stages, boiler rooms, paint shops, etc.

The city does try to locate an alarm box by each school; fire alarm systems are not required to be connected directly to fire alarm headquarters.

Smoking is permitted in teachers' lounge rooms only.

We do not have a program for instructing teachers and janitorial personnel in the rudiments of fire prevention. □□

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MANUFACTURERS' NEWS

Continued from page 1053

crophone. The latter is attached to the amplifier-speaker case which is carried on the belt. The unit is claimed to be waterproof and is powered by pen-light batteries.

SuperVac Moves To New Plant Location

The Super Vacuum Manufacturing Co., formerly located at 319 East 17th Ave., Denver has moved to a new plant facility at 1055 East First St., Loveland, Colorado. According to Super Vac president Henry Zeiler, the new facilities will permit expansion of the company's activities.

Holmin Voice Gun

The Voice Gun, a transistorized power megaphone, moulded of Cycolac and said to be virtually unbreakable, is announced by the Wm. A. Holmin Corporation, 1212 Eleventh Street, Rockford, Ill. The Model A-12 is said to weigh 3¼ lbs.

Waukesha Gas Turbine

The Waukesha Motor Co., Waukesha, Wis., has announced development of an industrial-type gas turbine engine. Rated at 400 h. p. at output shaft speed of 3,600 rpm, it is said to be a simple yet rugged engine providing excellent high torque characteristics for truck and off-the-road vehicle applications.

The engine measures 50 inches in length and 28 inches in width over the exhaust collector and weighs 620 pounds

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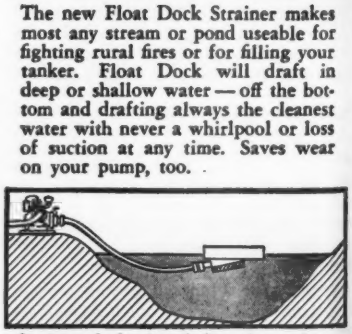

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less the starter-generator. It is designed to run 20,000 hours at full load between overhauls and it is expected this period should be extended many-fold at reduced power ratings. Design, assembly, and testing of the turbine was done in collaboration with the Williams Research Corp., Pontiac, Mich.

Fyr-Fyter Announces All Purpose Extinguisher

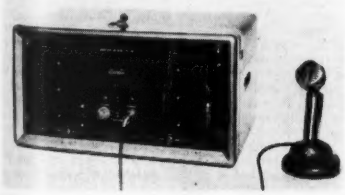
The Fyr-Fyter Co., 221 Crane St., Dayton 1, Ohio is marketing two pressurized dry chemical extinguishers (ABC-Rated) for use on all three classes of fire. The 20 pound Model 52-1 is said to be rated at 3A, 20 B:C. The 30 pound model 53-1 is said to be rated at 4A, 20 B:C.

Wins Hannay Auto

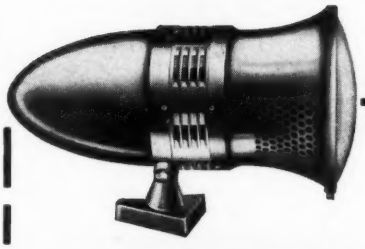
This replica of a 1910 Model T fire chief's car presented by Clifford B. Hannay & Son, Inc., Westerlo, N. Y. during the recent International Association of Fire Chiefs Conference in Rochester, N. Y. was won by Fire Marshal Ernest J. Hesslen, New Orleans, La. The miniature car is powered by a gasoline engine and capable of speeds up to 10 mph.

Aerotron Base Station

Aerotron, P. O. Box 6527, Raleigh, N. C., has announced its new Model 6N100 base station consisting of what



is said to be a sensitive receiver and a 100 watt transmitter housed in a compact, table-top console. It is type accepted by the FCC for operation in the fire radio services. □□



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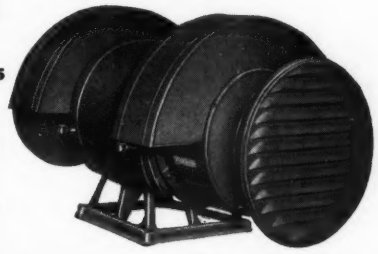

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STAY ON THE RIG

Continued from page 1037

before the apparatus leaves the station, nor have we had any complaints from the men. Recently during a training session, the rear end of our Aerial No. 2 was involved in a wreck. Although the wheel was pulled out of the hands of the tillerman, thanks to his belt he stayed in his seat as if glued there, and suffered no injury. Concerning the use of his seat belt, our chief commented that it gave him a very satisfying feeling of security even in turning an average corner at moderate speed.

Another objection might be that men will not use belts for what is known to be a short run. The best way to answer this is with a story. Several years ago, a prominent Denver citizen installed belts in his car. That very evening he set out for the drug store to buy a pack of cigarettes. Since the trip involved a distance of only two blocks he didn't fasten his belt. At the only intersection on the trip he was involved in a collision and thrown from his car. He was critically injured, but survived. Since his car was not demolished, and forces involved in the collision weren't too great, if he had been belted to his seat, he would probably have sustained no injury. Moral: Any time the rig is moving, all fire fighters should have safety belts fastened.

Helmet necessary for protection

Probably more thought has gone into design of standard clothing of a fire fighter than most firemen realize. The helmet shows the result of thought, planning, and a long process of evolution. The helmet is made so that it resists impact—the shield identifies the wearer; the extension in the back diverts water, either hot or cold, from running down the fireman's back; and most helmets do not conduct electricity. The Cornell statistics of crash injuries demonstrated that 72 per cent of all persons injured received a head injury. Worn in a vehicle crash, the helmet gives a high degree of protection to a very vulnerable area of a fire fighter, his head, hard though it may be. Another item of clothing that gives a high degree of protection is the standard turnout coat. It keeps the heat of the fire out, it protects the weary wearer against biting cold during a long wet overhaul, and it gives considerable protection from surface wounds during a vehicle crash. Thus it should be a fixed rule that any time apparatus rolls out of the station, all fire fighters wear a turnout coat and a helmet with chin strap adjusted, if so equipped.

An incident that occurred in the College Park, Md., Volunteer Fire Department, on September 5, 1953, should convince any fireman that needs to be sold, on the value of wearing protective clothing. During response to a fire call, a sudden traffic tie-up necessitated emergency application of brakes. This caused the College Park pumper to skid on the slippery street and Fireman John Orner, riding on the rear step, was thrown head first into a telephone pole. He sustained lacerations and two fractures of the cheek bone, but his helmet, in being crushed by impact with the pole, spared his head, and allowed him to survive the accident. That fireman owes his life to the department regulation requiring all men riding apparatus to wear protective clothing.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF FIRE ENGINEERING, published monthly at Lancaster, Pa., for October 1, 1960.

1. The names and addresses of the publisher, vice president, executive manager, editor are: Publisher, The Reuben H. Donnelley Corporation, 466 Lexington Ave., New York 17, N. Y.; Vice President, Edward A. O'Rorke, 466 Lexington Ave., New York 17, N. Y.; Executive Manager, Edward B Wintersteen, 466 Lexington Ave., New York 17, N. Y.; Editor, Donald M. O'Brien, 466 Lexington Ave. New York 17, N. Y.

2. The owner is: The Reuben H. Donnelley Corporation, 466 Lexington Ave., New York 17, N. Y.; Carol Lynn d'Almeida Santos, Paris, France; Elliott Donnelley, Lake Forest, Illinois; Elliott Donnelley, Trustee under the Gaylord Donnelley Trust Agreement, Chicago, Illinois; Gaylord Donnelley, Libertyville, Illinois; C. Pardee Erdman, Santa Barbara, California; C. Pardee Erdman, Jr., Sheridan, Wyoming; R. H. Donnelley Erdman, Santa Barbara, California; Charles C. Haffner, Jr. and Clarissa Donnelley Haffner, Trustees for Charles Christian Haffner, III, Clarissa Gaylord Haffner, Frances Ann Haffner, and Phoebe Louise Haffner, Chicago, Illinois; Laura E. Peters, Wilmette, Illinois; Donald R. Arnold, New York, N. Y.; Mary Jo Smith Andersen, Curtiss E. Frank and Harris Trust and Savings Bank, Executors under the Will of Albert M. Andersen, deceased, Chicago, Illinois; Curtiss E. Frank, Lake Forest, Illinois; Harold P. Harper, Greenwich, Connecticut; David L. Harrington, Flossmoor, Illinois; The Northern Trust Company, Chicago, Illinois, Trustee of Fund A under the Will of Reuben H. Donnelley, deceased; The Northern Trust Company, David L. Harrington and Charles C. Haffner, Jr. as Trustees under agreement dated January 24, 1946 with Thorne Donnelley, Chicago, Illinois.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required by the act of June 11, 1960 to be included in all statements regardless of frequency of issue.) 19,200.

E. B. WINTERSTEEN.
Executive Manager

Sworn to and subscribed before me this 30th day of September, 1960.

WALTER H. FREDRICKS,
Notary Public, State of N. Y. No. 41-6391975 [SEAL]
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The various groups that have studied the subject of injury prevention have come up with some other ideas beyond the use of seat belts. The chief of these is improved design so that automobiles protect the passenger. There should be sufficient room, so that in a crash, if the passenger is restrained by a belt, and his body jackknifes forward, his head will not strike the windshield or instrument panel. Knobs projecting from the instrument panel should be removed or recessed. The instrument panel might be covered with an energy-absorbing material so that if a human skull strikes there, no fracture occurs. Such a material has been developed, and it is so efficient that fresh eggs dropped from a height of 115 feet, giving them an impact velocity of 55 miles per hour, did not break when they landed on a pad of this material only 1⅛ inches thick. This sounds unbelievable, but it has been demonstrated to the author. To diverge briefly, wouldn't this material, if used to line a fireman's helmet, offer tremendous protection to the skull that helmet contains?

Injuries from steering wheel

You will recall the steering assembly was named first in importance of the structural elements of the automobile in inflicting injuries on passengers. Since the steering column in trucks is likely to be more nearly vertical, while that in automobiles rakishly approaches the horizontal, truck steering columns are less like a spear aimed at the chest of the driver. Even so, injuries can come from the steering wheel or column in a crash, and design should be directed at producing a steering wheel that will absorb energy. This might be achieved by padding an existing wheel with the energy-absorbing material mentioned above. Some manufacturers did it by building a "deep dish" wheel, which gives in a crash, and absorbs considerable energy before the driver's chest encounters the steering column.

The position in which men ride on fire apparatus must have considerable to do with the risk they assume. Plugmen run the risk of being thrown off in a minor accident, or even when the apparatus goes over a bad bump. A wreck occurred recently when a pumper struck a motorist who tried to beat it through an intersection. The pumper did not overturn, but was deviated from its course rather sharply. Had all the firemen been restrained in their positions there would have been no injuries. Instead a plugman was thrown off and suffered a broken thigh, with the result that he was off duty for many months. Recall the Maryland

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story of the plugman who was catapulted headfirst into a telephone pole, but was saved by his helmet. Had he been held in place with a belt, the department would have been saved one helmet; he would have been spared a headache, facial injuries, and the risk of a broken neck, and he would have been available to pull hose when needed. From these remarks, we reach the conclusion that whenever possible, men should be kept off the rear step. Let no more than one man ride there, and he anchored in position by a belt, which he can release just prior to taking the plug. Other hosemen should ride in the rear seat of the cab, or in side seats on apparatus so equipped, all restrained in place by belts.

The question may be raised about how to tie down a plugman. Queries were sent to a number of fire departments, and while some provide seat belts, nearly all had no belts for the plugman. The man riding the tailboard should be secured snugly against the after end of the rig and the hose load in an area where there are no sharp projections. This can be done by an adaptation of the standard seat belt.

I am sure the question will arise that if the pumper rolls over, wouldn't the plugman be safer without a belt? Pumpers are heavy and have a low center of gravity, so rollovers are uncommon. A belt would protect the plugman in the common accidents in which the pumper doesn't roll, but in which he is likely to be thrown off and injured. If the pumper rolls, a plugman without a belt might be thrown free, but he is more likely to be crushed by his own rig as it rolls over. In a rollover, a plugman secured with a belt is given some protection by the height and width of the rig. However, his position is precarious at best,

which is the reason for my statement that no more than one man should ride the tailboard.

In March 1960, while responding to a malicious false alarm, a Denver fire captain was killed in a traffic accident. It would be much less unpleasant for us just to forget this accident, however recalling it and recounting it now serves to emphasize several of the points of this paper. As Hose Wagon No. 5 of the Denver Fire Department approached an intersection a car crossed in front. To play it safe, the apparatus driver applied brakes and shifted into second gear. Despite these precautions, another car collided with the apparatus almost in the center of the intersection. As the hose wagon rolled, the right door sprung open, the captain was thrown out, then the truck rolled on him, crushing and killing him instantly. The cab of the truck was not collapsed nor crushed, and had the captain not been ejected, he probably would have survived. The driver, with just a wheel to hold to, was not ejected and received only minor injuries. Three men were riding the rear step. Of these, two were thrown off, but the man in the middle, who was not thrown off in the rollover sustained the least injuries and was back to duty quickly. The story of this wreck certainly supports the contention that injuries to firemen will be reduced in number and severity if the men are not thrown off the apparatus. Everything said so far about the use of belts on fire apparatus applies equally to the chief's car, or the car in which a volunteer responds to a fire.

A wise man has made the statement: "A seat belt is somewhat comparable to a parachute, or life insurance. If you need it and don't have it, you are likely never to need it again."

Firemen nation's best drivers

This subject of accidents may be somewhat distasteful to fire chiefs and fire fighters, for they are numbered among the nation's best drivers. The writer has responded to enough fires with a chief, or on apparatus, or in his own car as fire department physician, to know that some autoists like to play a tag similar to Russian roulette when fire apparatus comes down the street. Some can't hear your siren, and some just don't give a damn, so no matter how good a driver you are, remember, accidents can happen. Statistics prove they do.

Since all accidents can't be prevented, at least let's try to minimize the injuries. The first goal of the fire service must always be the saving of

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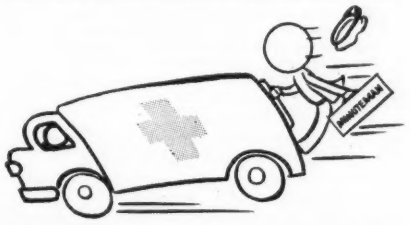

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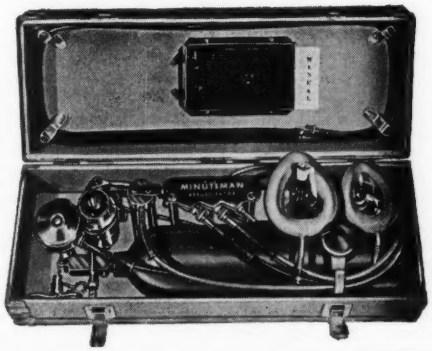

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BIBLIOGRAPHY

1. **Prevention and Reduction of Injuries in Traffic Collisions,** by W. W. Harper. Journal of Criminal Law, Criminology and Police Science. 43:515 Nov.-Dec. 1952.
2. **Operation Egg Drop.** Paper prepared by Automotive Safety Subcommittee, Colorado State Medical Society.
3. **Preliminary Finding of the Effect of Automotive Safety Design on Injury Patterns,** by Braunstein, Moore, and Wade. Surgery, Gynecology and Obstetrics, Sept. 1957. 105: 257-263.
4. **Roberts Committee of Congress.** Hearings of 1956 and report No. 2971. Hearings of 1957 and report No. 2275.
5. **Accident Facts,** 1959 edition. National Safety Council.
6. **Deceleration, Highway Mortality and the Motorcar,** by Horace E. Campbell, M.D., Surgery. 36:6, 1056-1058. Dec. 1954.
7. **Deceleration and the Motorcar,** by H. E. Campbell, M.D., Journal of the American Medical Association, Vol. 154, No. 12, page 1023.
8. **Injury Prevention in Motorcar Crashes,** by H. E. Campbell. Rocky Mountain Medical Journal, July 1957.
9. **We Can Prevent Injuries in Automobile Crashes,** by H. E. Campbell, Rocky Mountain Medical Journal, Sept. 1956.
10. **Role of the Safety Belt in 19 Auto Crashes,** by H. E. Campbell. Bulletin of the American College of Surgeons, 40:155, 1955.
11. **Twenty-One More Auto Crashes with Seat Belts,** by H. E. Campbell, Rocky Mountain Medical Journal, April 1956.
12. **Twenty-Two More Crashes with Belts, What May We Expect of the Automobile Seat Belt?** By H. E. Campbell. Canadian Medical Association Journal, Vol. 74, 342-346, March 1, 1956.
13. **The Seat Belt—A Controversy,** by John O. Moore, Director, Division of Automotive Crash Injury Research, Cornell University Medical College.
14. **Automobile Impact Research,** by Mathewson and Severy, Institute of Transportation and Traffic Engineering, University of California.
15. **Medical Analysis of Survival in Falls from Heights of 50 to 150 feet,** by Hugh de Haven, Research Associate, Cornell Medical College. War Medicine, July 1942.
16. **Gross Pattern of Injury of 109 Survivors of Five Transport Accidents,** by A. H. Hasbrook. Aviation Crash Injury Research of Cornell University.
17. **Interim Federal Specification JJ-B-00185 (GSA-FSS)** sets requirements for seat belts and calls for loop strength in excess of 5,000 pounds.
18. **Automotive Crash Injury Research, 1956-1957.** Annual Report, Department of Public Health and Preventive Medicine, Cornell University Medical College.
19. **Colorado Springs Fire Department,** Annual Reports for 1918 and 1922.
20. **Fire Engineering,** Jan. 1, 1949 to Jan. 1, 1959.

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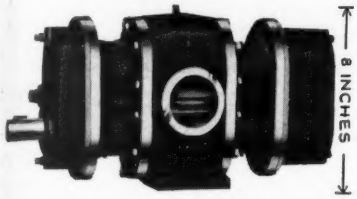

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21. **Firemen,** Jan. 1, 1949 to Jan. 1, 1959.
22. **Human Tolerance to Deceleration** by Lt. Col. John P. Stapp, M. C., Holloman Air Force Base, New Mexico. American Journal of Surgery, Vol. 93, April 1957.
23. **Fire Service Bulletin,** University of Maryland. Dec. 10, 1953. Aug. 15, 1959.
24. **The Chicago Fire Fighter,** September 1955. Page 81.
25. **Criteria for Crash Protection in Armed Forces Ground Vehicles,** by Stapp and Lewis, April 1956.
26. **Human Tolerance to Aircraft Seat Belt Restraint,** by Lewis and Stapp. Journal of Aviation Medicine. March 1958.
27. **The Front Seat Passenger in a Crash,** by Crothers, Hall and Heck. Modern Medicine. August 15, 1957.
28. **Aircraft Safety Belts: Their Injury Effect on the Human Body.** Aviation Crash Injury Research of Cornell University. July 1953.
29. **Are Seat Belts Good or Bad?** Traffic Safety, July 1957. National Safety Council.
30. **Automotive Crash Injury Research,** by Robert J. Allen. Police Magazine. Sept. and Oct., 1959.
31. **Smart Drivers Use Seat Belts.** Traffic Safety Magazine. Reprinted in Rocky Mountain Medical Journal, July 1959.
32. **Better Traffic Control Continues to be the Fire Service's No. 1 Response Problem,** by Donald M. O'Brien. Fire Engineering, page 792, August 1957.
33. **Electronic Traffic Control to Speed and Safeguard Fire Force Response.** FIRE ENGINEERING, page 913, October 1956.
34. **Personal Communications,** Clarence W. Rose, Rose Manufacturing Co., 2700 West Barberry Place, Denver 4, Colorado. Demonstration belt for plugman supplied by Rose Manufacturing Company.
35. **Chief G. L. Ecker and Capt. Robert Newcomm,** Lakewood-Montair Fire Department. for demonstration and pictures of safety belt for plugman.
36. **Personal Communications from:**
Chief Lester R. Schick, Davenport Fire Dept.; Davenport, Iowa. First Deputy Chief Fire Marshal James Bailey, Chicago Fire Dept., Chicago, Ill. Assistant Chief William A. Terrenzi, Boston Fire Dept., Boston, Mass. Chief William F. Murray, San Francisco Fire Dept., San Francisco, Calif. Deputy Chief Charles W. Bahme, Fire Dept., City of Los Angeles, Calif. A. L. Schoonover, Los Angeles County Fire Dept. Robert W. Byrus, Director, Fire Service Extension, University of Maryland, College Park, Maryland.
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Colorado State Patrol.
A. Howard Hasbrook, Box 466, Gilbert, Arizona. Al Lorett, driver, Denver Fire Dept., Denver, Colorado. Chief Allie Feldman, and Asst. Chief Myrle K. Wise, Denver Fire Dept.
37. **Traffic Safety,** June 1960, quoting from publication of Farmers Mutual. □□

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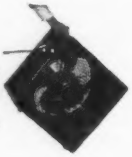

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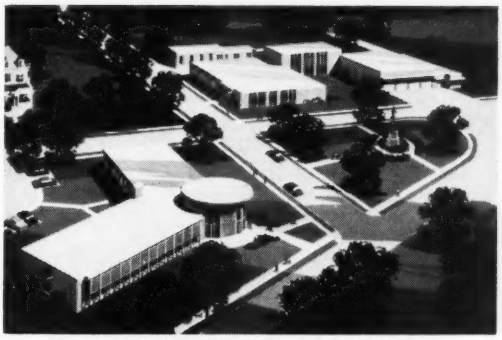
The Hose-Conditioning set up is complete—2 Circul-Air Dryers, 1 Roto-Jet Washer, 1 Porto-Rak and 15 sections of 'In-A-Wall' Hose Storage Racks. All are installed in a special, air-conditioned hose servicing room, probably the most comprehensive layout of its kind in the country.

Scheduled for completion this month, estimated cost of the project is about $1,000,000. Fire Headquarters are shown in the upper right section of the picture. Our congratulations to the Planning Commission, City Administration, Fire and Police Officers and to A. T. Lacey & Sons, Architects, for most dramatic presentation of public buildings.



New Municipal Buildings—Fire & Police Stations—
City of Endicott, N. Y.
A. T. Lacey & Sons—Architects—Binghampton, N. Y.

OVER 6000 Fire Departments CIRCUL-AIR Their Hose

The ORIGINAL Electric Hose Dryer

- Eliminates Ugly Unsafe Hose Towers
- Dries Hose in a Few Hours
- No Radiant Heat — Can't Injure Hose
- Dries Fire Clothing, Too
- Keeps All Hose Ready for Service
- Reduces Station Construction Cost

Roto-Jet

"Automatic" FIRE HOSE WASHER

WASHES • RINSES • DRAINS

- Hose is Self-propelled • One-man Operation
- Washes Uniformly — Including Edges
- Uses Clear Water or Detergents
- Drains Hose Linings, Too • Portable

Porto-RAK

MOBILE HOSE STORAGE AND LOADING UNIT

- Racks 1800 ft. 2½" Hose
- Equipped with Locking Casters
- Detachable Turn-table to Re-load Truck
- Stores in a 9 ft. Space
- Moderately Priced — Shipments from Stock

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THE CIRCUL-AIR CORPORATION 575 EAST MILWAUKEE DETROIT 2, MICHIGAN

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Spitz-All

ENDS CLOGGED NOZZLES

If you've ever had a nozzle out of action by clogging from scale, sand, or stones — here's your nozzle. Spitz-All clears itself by pressing a button. No shutting down. No changing stream position. A rugged, lightweight, constant gallonage nozzle that works easily in all positions at any pressure.

Style	Size	Description	Wt. Lbs.	GPM	Price
910	1"	Solid Base	3	23	$88
908	1"	Pistol Grip	4¾	23	98
905	¾"	Solid Base	3	12	88
904	¾"	Pistol Grip	4¾	12	98
915	1½"	Swivel Base Solid Base	5¾ 5¼	95-60	96

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